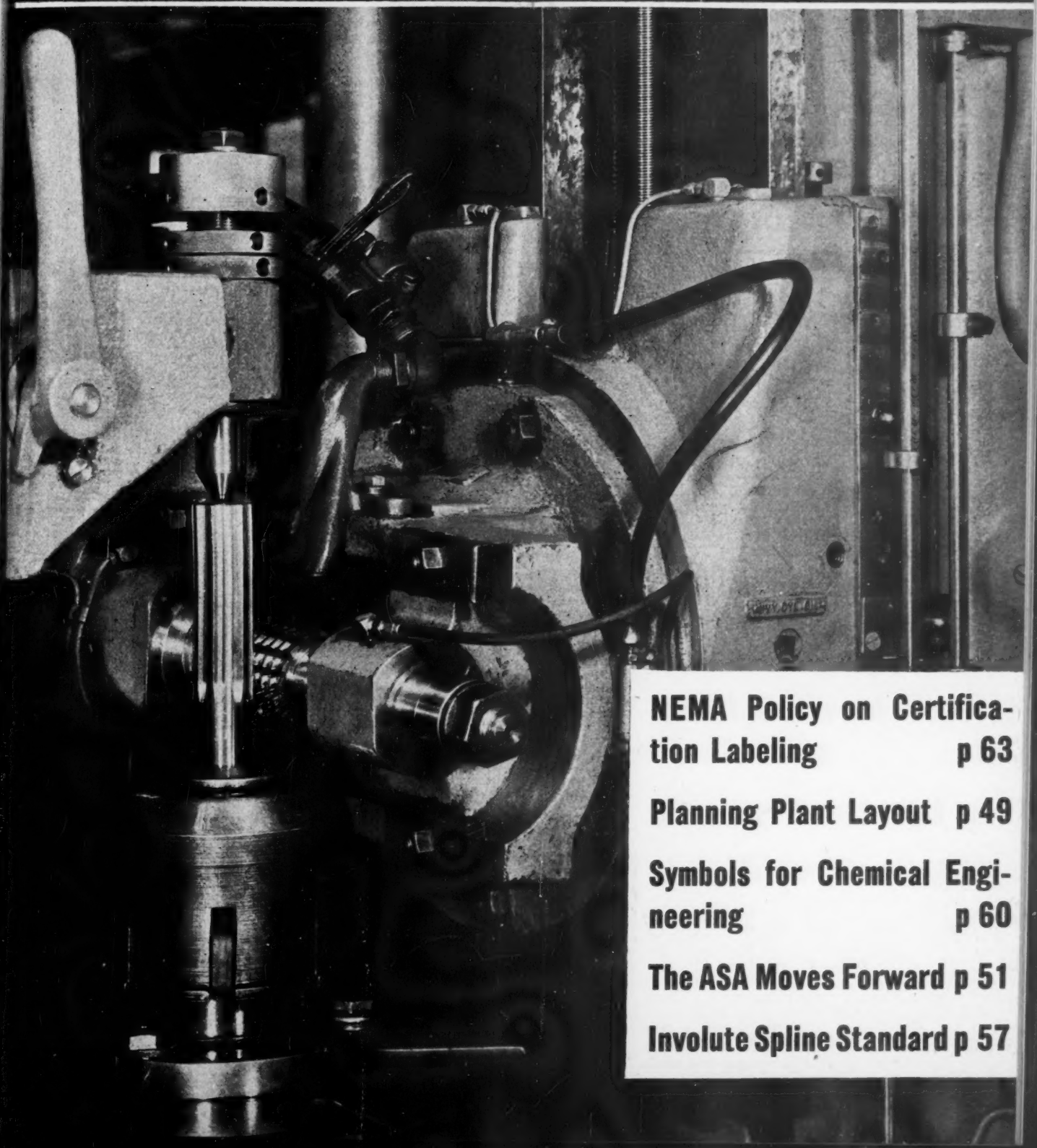
Industrial

March 1947

Standardization



NEMA Policy on Certification Labeling p 63

Planning Plant Layout p 49

Symbols for Chemical Engineering p 60

The ASA Moves Forward p 51

Involute Spline Standard p 57

American Standards Association

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Amer Petroleum Institute
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Amer Soc of Mechanical Engineers
Amer Soc for Testing Materials
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Amer Transit Assn
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Federal Works Agency
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- Associated Factory Mutual Fire Insurance Companies
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- Nat Fire Protection Assn
- Underwriters' Laboratories, Inc

Gas Appliance Mfrs Assn
Heating, Piping and Air Conditioning Contractors National Association
Institute of Radio Engineers
Mfrs Standardization Soc of the Valve and Fittings Industry
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Photographic Mfrs Group:
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Portland Cement Assn
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- Sheet Metal Screw Statistical Service
- U.S. Cap Screw Service Bureau
- U.S. Machine Screw Service Bureau
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Soc of Automotive Engineers, Inc
Soc of Motion Picture Engineers
Telephone Group:
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U.S. Department of Commerce
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Veneer Association

Company Members

Some 2000 industrial concerns hold membership either directly or by group arrangement through their respective trade associations

Readers Write

Price List Valuable as Reference

Bramson Publishing Company
Detroit, Michigan

Gentlemen: We thank you for sending us the Catalog of American Standards. We believe the complete list of American Standards will be of great value as reference material in our Editorial Department.

FRANK M. SCOTTEN
Editor, Production Engineering and Management

American Standard "Abbreviations for Scientific and Engineering Terms" Aids Publication

Products Finishing
Cincinnati, Ohio

Gentlemen: Would you be kind enough to send us a list of "Abbreviations for Scientific and Engineering Terms"? Such information will be of very great help to us in our publication work.

ROBERT I. SHORE
Associate Editor

Better Sealing Fit Covered in Pipe Standard

Northrop Aircraft, Inc
Hawthorne, California

Gentlemen: I had been informed that there is in process somewhere a new proposal for pipe threads which will provide a better sealing fit, probably a new class of fit to be added to the present standards. I should like to know if you are acquainted with this proposal and if so what the progress has been. I have the impression that a past modification of the AN specification, AN-GGG-P-363, incorporated a higher external thread, to increase the sealing effect. I wish to know whether there is any current effort to add such a class of fit to the Federal Standards, or to ASA B2.

G. M. ARON
Standards Engineer

• • The American Standards Association was pleased to inform Mr Aron that the better sealing fit to which he refers is called "Dryseal Pressure-Tight Joint", and is covered in American Standard Pipe Threads, B2.1-1945.

Our Front Cover

shows an involute spline in process of being hobbed. Article on the new American Standard for involute splines, page 57. Photo courtesy Gould and Eberhardt.

Industrial Standardization

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Contents

Abbreviations and Letter Symbols—

American Standard Letter Symbols—Uniform Language for Chemical Engineering. By J. H. Perry 60

American Standards Association—

The ASA Moves Forward

The Challenge. By Frederick R. Lack 51

Steps Already Taken. By P. G. Agnew 51

New Representatives on ASA Standards Council 56

Five New Members Elected to ASA Board of Directors 59

ASA Standards Activities 72

Associations and Government—

Textile Technologists Elect Freedman and Bronner 67

Producers' Council Names Lorimer as Consultant 67

New Standards in ASA Library 71

Consumer—

Interest in Standards Grows as Basis for Increasing Sales 62

International—

ISO and IEC at United Nations 55

British Revise Collected Standards on Workshop Practice and Hoists 68

Czechoslovakia Now Producing Four Standard Commercial Vehicles 68

Canadian Association Asked to Certify Building Papers 69

Brazil Plans Seventh Annual Standards Meeting 69

Canadian Committee Studies Paint Color for Machine Tools 69

Australian Association Names Housing Standards Committee 69

New Standards from Other Countries 70

Labeling—

NEMA Formulates Policy on Testing and Certification Labeling 63

Mechanical—

For Planning Plant Layout. By R. W. Mallick and Richard Rimbach 49

Latest in Machine Tool Series—Involute Spline Standard. By S. O. Bjornberg 57

Standards in Production—

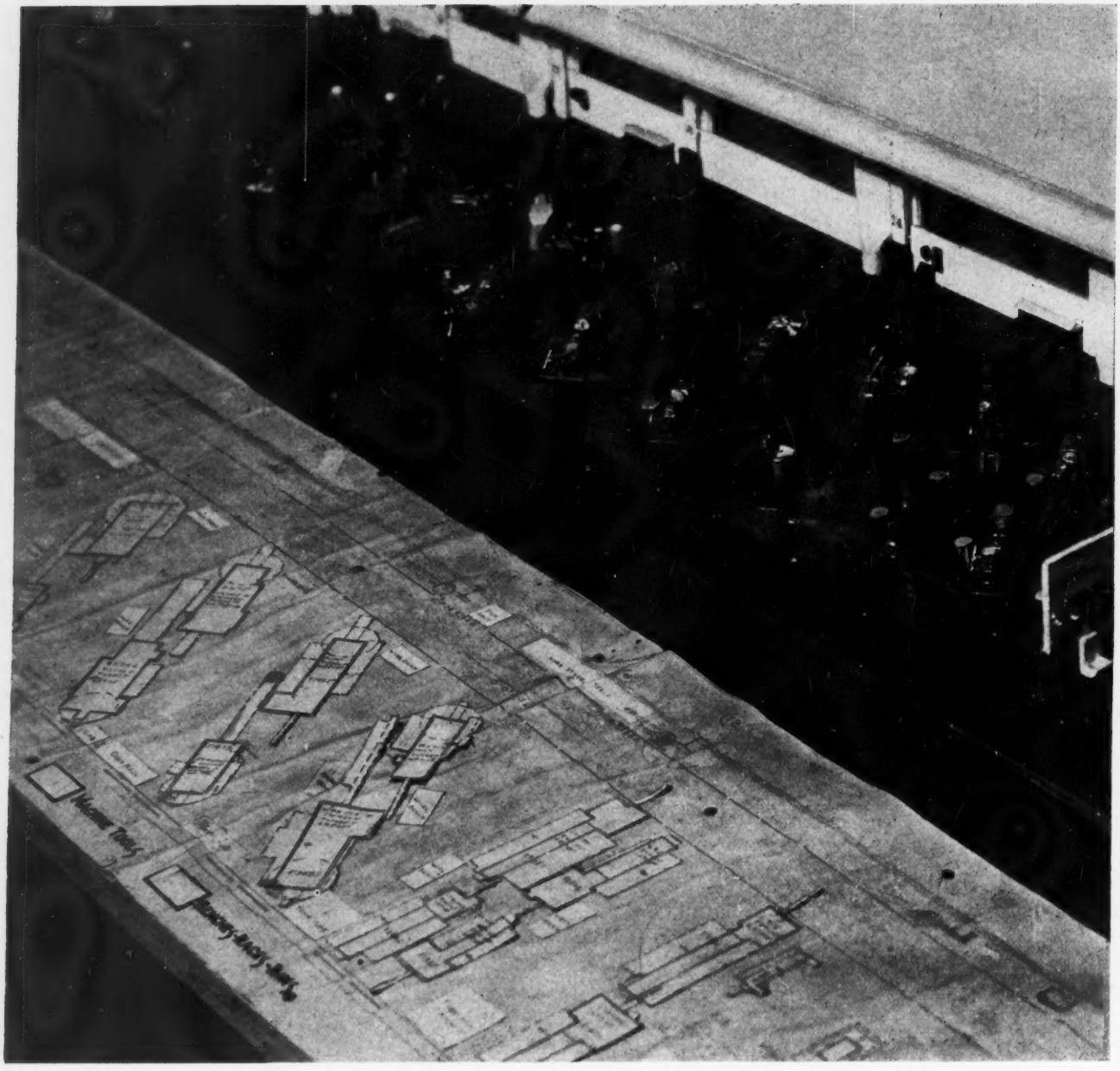
Columbia University Starts Course in Standardization 56

March, 1947 Ruth E. Mason, Editor 35 Cents

The American Standards Association is a federation of national groups dealing with standardization. Through it, government, industry, labor, and the consumer work together to develop mutually satisfactory national standards. It acts as the authoritative channel for international cooperation in standardization work.

Subscription price $4.00 per year (foreign $5.00). Special to schools and libraries $2.00 (foreign $3.00). Re-entered as 2nd Class Matter 7/31/43, at the Post Office, New York, N. Y., Act of March 3, 1879

For



Use of two-dimensional templates on the proposed floor plan and three-dimensional models to visualize the location of machine tools in shop planning (as shown above) gives best engineering value and reduces the cost of layout and drafting, in the opinion of a committee now working on standards for plant layout templates and three-dimensional models.

Courtesy Westinghouse Electric Corp

Planning Plant Layout

Standards for templates and three-dimensional models are being developed by a committee of the ASME

By R. W. Mallick and Richard Rimbach

STRANGE as it may seem, our nation has achieved the world's highest level of industrial and commercial development without the benefit of an engineering standard for layout planning. It is heartening to realize that, despite the high levels we have enjoyed, we can look forward to still higher ones, as we eliminate wasteful practices, errors, and misunderstandings through the application of standards.

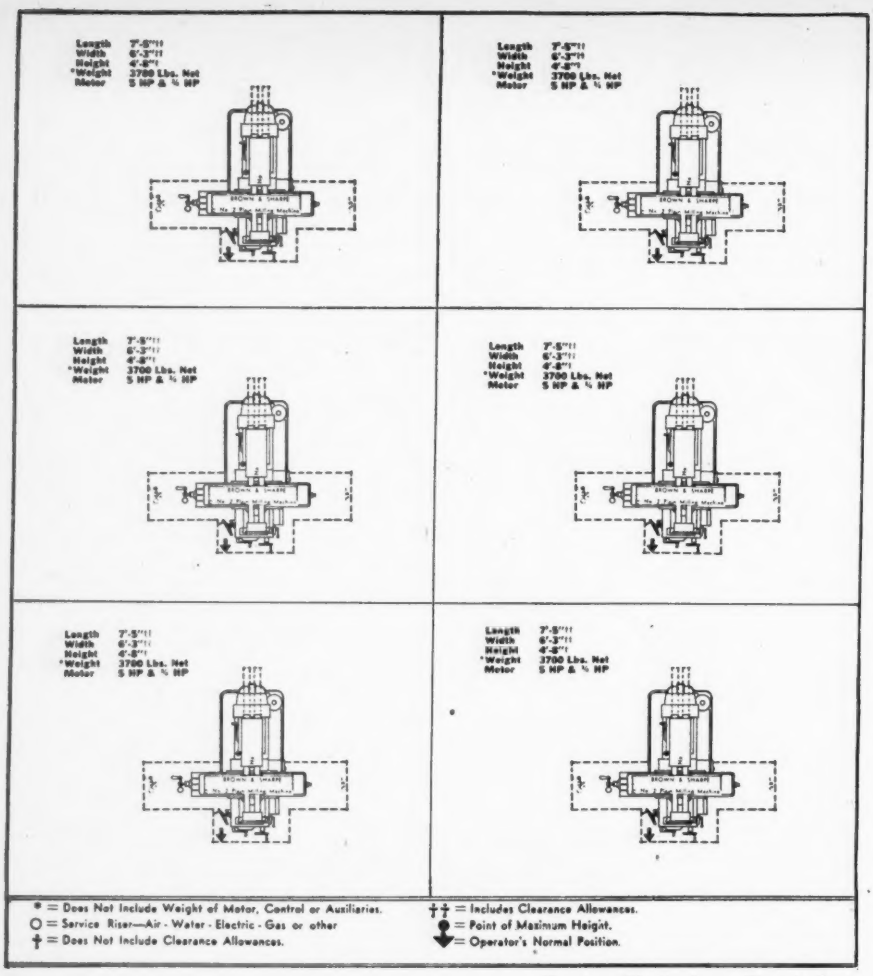
Planning of industrial or commercial enterprises is an extremely important undertaking. It is the planned layout which becomes the "blueprint of the whole" and integrates the hundreds of elements that go to make it up. It is logical to say that no one element can be more important than the whole structure, yet we quite often pay more attention to the "details" than to the "general plan."

In planning layouts, every plant operation should be envisioned and provided for. While plant layout engineers constantly strive to improve installations, there would be less "corrective engineering" if more "effective preplanning" were used.

About a year ago, the American Society of Mechanical Engineers was requested, by resolution of several hundred members of the Materials Handling Division, to sponsor a committee to recommend standards

PLANT-LAYOUT COMPARISON CHART

	BLOCK TEMPLATE	2-DIMENSIONAL TEMPLATE	3-DIMENSIONAL MODEL	COMBINATION OF 2-DIMENSIONAL TEMPLATE AND 3-DIMENSIONAL MODEL
COST	Low first cost. Can be made by inexperienced personnel	Requires services of a fairly skilled draftsman with a knowledge of machine tools. First cost considerably higher than for block templates	Requires skilled model maker if made special. Most models not yet available commercially. Cost of models in quantity not appreciably higher than good two-dimensional templates	Initial cost of this method combines the cost of two-dimensional template and three-dimensional model
ENGINEERING VALUE	Very poor. Does not permit good visualization of layout or effective arrangements	Good. This type of template in the hands of a proficient engineer permits very effective layouts. Does not permit easy interpretation of the layout by nontechnical personnel	Good. Makes faster development of equipment arrangements for effective layouts. Helps to "sell" the layout	Best. Combines all the merits of two-dimensional template and three-dimensional model
ADVANTAGES	Can be made quickly at very low cost	Gives a very accurate layout and reduces time required to make final drawings. Clearly indicates actual floor areas required. Serves as a permanent template when properly made. Greatly reduces possibility of errors as compared to block templates	Aids visualization of layouts by nontechnical personnel. Various arrangements can be made quickly at very low cost. The various schemes can be photographed for comparison studies. Models can be used indefinitely	Permits highly accurate layouts to be made quickly with complete engineering details. Gives full visualization of layout. Only one set of models necessary to make any number of layouts. Reduces layout and drafting cost
DISADVANTAGES	Does not provide for accuracy of layout, effective arrangement, or economical utilization of floor space. Increases drafting time and cost of engineering drawings. Fosters discrepancies and errors. Increases over-all layout cost	Cost is considerably higher than block templates. Does not provide ease of perceptibility inherent in models. Requires engineers to carry mentally all planning in the third dimension	Does not carry the engineering information provided by the two-dimensional template. Does not show machine clearances required for operation or services. Increases drafting time	Highest initial cost of any method


Length 7'-5"††
Width 6'-3"††
Height 4'-8"†
*Weight 3700 Lbs. Net
Motor 5 HP & ¼ HP
* = Does Not Include Weight of Motor, Control or Auxiliaries.
○ = Service Riser—Air - Water - Electric - Gas or other
† = Does Not Include Clearance Allowances.
†† = Includes Clearance Allowances.
= Point of Maximum Height.
= Operator's Normal Position.

Courtesy Westinghouse Electric Corp

These templates for milling machines were prepared according to the ASME suggested standards and are intended for use with the scale models. The scale is: 1/4 inch equals 1 foot.

for plant layout templates and three-dimensional models. After careful consideration the committee was authorized and the work began.

Committee Membership Diversified

Membership on the committee is well diversified. Members of the committee represent the divisions of management, production, and materials handling. Represented also on the committee are equipment manufacturers, equipment users, U.S. Navy, universities, and consultants. This broad representation should result in the recommendation of worthwhile standards.

The first task undertaken by the committee has been to prepare standards for plant layout templates. These will then be followed by standards for three-dimensional models. The use of three-dimensional models is rapidly progressing and the need for standards is being greatly emphasized.

The first phase of this work is now nearing completion. The committee is considering the final draft of tentative standards for templates. These recommendations cover the scale, general outline, detail, clearances, interferences, data, identification, special features, and printing specifications for equipment templates.

Considerable research work has been done by the members of the committee, to assure that the standards recommended would be practical, nonconflicting, and give due consideration to past practices.

Standard Scale Models

The proper arrangement of production equipment will insure maximum economies, faster production, increased safety, greater profits, and reduced material handling. By the use of scale models—complete plant layout engineering in miniature—it is possible to obtain a three-dimensional preview of a plant's efficiency. Formerly engineers used crudely carved wood models.

The study now underway for model standards is covering the features of scale, detail, finishes, allowances and clearances, materials and construction, and identification.

Scale models should be readily distinguishable as representative of the actual machines or equipment, as can be seen in the illustration. Such models, scaled 1/4 inch to the foot, should show all clearances required under extreme operating and service conditions of the machine, as well as pertinent data required by the plant-planning engineer.

Both templates and scale models are engineering tools in the same sense as are slide rules and T squares. They are probably more important, for they are used to represent the actual equipment or structure which may represent millions of dollars of investment. Major decisions, often by nontechnical persons, are based on the plans or model designs of the project. From an engineering standpoint many hidden problems can be easily and quickly recognized and solved when accurate templates and scale models are used.

By the use of the templates and scale models, it is possible to study a manufacturing process quickly and easily, thus combining, changing the sequence of, or simplifying operations, invariably arriving at improved manufacturing methods and conditions.

A layout with precision scale models will present a three-dimensional picture which stimulates the imagination and materially aids in improving plant layout. Such a scale model layout permits studying various arrangements, with slight expense.

Standardization of templates and scale models is going to greatly reduce the cost of preparing plant layouts, reduce planning time, greatly reduce omissions and errors, and have a marked effect on improving the quality of layout designs.

R. W. Mallick, *Westinghouse Electric Corporation, is chairman of the Plant Layout Model Standards Committee of the American Society of Mechanical Engineers.*

Richard Rimbach, *vice-president, Triometric Engineering Company, Pittsburgh, is a member of the committee.*

The ASA Moves Forward

The Challenge

By Frederick R. Lack

President, American Standards Association

THE American Standards Association is moving forward. It is girding itself to do the job which its greatly increased responsibilities demand.

The most basic part of this tooling-up process is to get the leaders of industry to understand the significance and importance of voluntary standards in the free enterprise system—and to enlist their cooperation and support. This is the responsibility of the Board of Directors.

In this undertaking we are extremely fortunate in having the outstanding leadership of Howard Coonley and the fifty first-line executives whom he and Charles E. Wilson have brought together in the Committee for Voluntary Standards.

The striking response of industry to the efforts of Mr Coonley, General Armstrong, and their co-workers is shown by the fact that industry provided some $250,000 during the last seven months of 1947 over and above the normal income of ASA—and that thirty new and important national groups have been brought into the sphere of interest of ASA.

Rapid progress has already been made by the Association toward the fulfillment of its enlarged scope as outlined by the planning committees of the Board of Directors and of the Standards Council, and as further developed in the reports of the Policy Committee on Standards headed by Charles E. Wilson.

The program of intensified cooperation between the Department of Commerce and the ASA outlined by the Policy Committee has now, with one modification, been reaffirmed by Secretary Harriman, who has asked the Committee to continue its advisory and liaison activities with the Department and the ASA. It is gratifying that the Committee has accepted this continuing responsibility.

The accompanying paper by Mr Agnew summarizes in some detail the various steps that have been taken by the ASA. Outstanding among these steps are:

Elimination of the word "engineering" in the scope of the ASA as defined in its constitution, thus putting the Association in a position to handle any standards which deserve national recognition.

Delegation by the Standards Council of a number of its activities to subsidiary bodies and the streamlining of its organization and procedures.

Active participation of the ASA in organizing the new consolidated International Organization for Standardization (ISO), which is already functioning and will facilitate international trade.

ASA's increased resources have made it possible to make substantial additions to the staff, thus enabling the Association to increase its technical services to members, sponsors, and committees. At the time of Pearl Harbor, there were but five technical members of the staff. With the additions during the last year, there are now sixteen.

The accompanying organization chart shows the structure of the ASA as a whole.

The technical work is showing vigorous growth. One of the new undertakings is a comprehensive job on office standards—including furniture, equipment, supplies, forms, and procedures. Another new project has to do with the definitions of terms used in connection with textile products sold at retail.

Nearly all of the new groups affiliating or interesting themselves in the ASA work are planning projects of special interest to them. It is but a sign of vigorous, healthy growth that these organizations bid fair to bring as much work as money into the Association. Our initial successes are no signal to rest on our oars. Instead, they are a challenge to all of us to grasp the new opportunities as they unfold. This challenge confronts us all alike—Member-Bodies—members of the Board and of the Standards Council — cooperating groups and committees.

Steps Already Taken

By P. G. Agnew

Vice-President and Secretary, American Standards Association

THE American Standards Association has been going through the most deep-seated changes that have occurred since its reorganization in 1928 from a committee into a full-fledged association.

Historical Roots

Organized in 1918 as a joint committee of the five large engineering societies, the Association was at first called the American Engineering Standards Committee. All the functions of the new organization—administration, finance, and supervision of technical work—were centered in this joint committee.

As the work started, technical committees were set up. These were formed on a representational basis which is still in use. Each technical committee is made up of representative of the various groups interested in the problem in hand. Thus, each committee serves as a little legislature in its own special field. Each represents a cross section of the interested groups. These committees are called *sectional committees*. Most sectional committees operate under the technical guidance of an organization having an outstanding position in the field, called a *sponsor*.

As the number of sectional committees in a particular field increased to a substantial number, it became necessary to set up a supervisory committee to relieve the Standards Council of the detailed work, and to plan and to correlate the work of the sectional committees in the entire field. The relation of the correlating committees to the sectional committees is shown at the bottom of the accompanying organization chart. The first of the correlating committees was the Safety Code Correlating Committee which was organized in 1920.

Growing pains naturally developed, and in 1928 a radical reorganization into an association was successfully completed. General administration and finance were placed in the hands of a Board of Directors made up of executives nominated by selected Member-Bodies. The old Committee itself was developed into the present Standards Council.

At the same time, the methods of work were broadened to provide for greater flexibility in operation. The principle was laid down that the basic test for the approval of a standard as American Standard was "the assent, affirmatively expressed, of the groups having substantial concern with the standard."

Five specific methods were officially recognized, which together have so far proved adequate to cover practically all cases. These are:

1. The Administrative Sectional Committee Method, in which the sectional committee, made up of representatives of the various groups substantially concerned with the subject, operates under the leadership of one of the cooperating bodies termed the "sponsor."

2. The Autonomous Sectional Committee Method, under which the committee operates without a sponsor, reports directly to a correlating committee.

3. The Existing Standards Method, under which any existing standard may be approved by the ASA, provided it is shown that the standard is supported by the necessary consensus of those substantially concerned with its scope and provisions.

4. The General Acceptance Method, under which American Standards may be established by means of a conference of those substantially concerned, supplemented by written acceptances from these groups.

5. The Proprietary Method, applicable only to the revision of standards, under which a body having a position of preeminent importance in the field of the standard develops a revision of the standard within its own organization. Such a body is known as the proprietary sponsor.

These methods of work have stood the test of time and are still in use. The only changes have been minor improvements in detail.

In connection with the general reorganization in 1928, special financing also enabled the work to be strengthened by a doubling of the staff.

In a sense those changes symbolized the growth of the organization from a strictly engineering basis to a broader industrial basis, and brought about a wider interest on the part of industrial executives. From that time until the time of Pearl Harbor, the work grew slowly but steadily. Five additional correlating committees to deal with electrical, mechanical, traffic, and building code standards, and one also for consumer goods, were organized during this period.

During this period, too, the Member-Bodies brought a substantially increasing amount of their standards work under the procedure of the ASA and submitted many of their existing standards for approval. There was a substantial increase in the number of nonmember associations cooperating in the work.

Fortunately, in order to speed up the work for the national emergency period, a special emergency procedure was set up a year before Pearl Harbor. For four years the greater part of ASA energies was devoted to war work. This work contributed in an important way to the profound influence which the war had in educating industrial and business people, and governmental officials as well, on the importance of standards. It also brought increased understanding and recognition of ASA.

Planning ASA's Postwar Development

The war brought the ASA in contact with new fields and new industries, and made both the Board and the Standards Council realize that they were going to have to be better tooled, and more flexibly tooled, if the ASA were ever to become in full measure the centralized force in the standardization activities of the country.

The extent to which the organization had to be oriented to war work impressed both the Board and the Standards Council with the necessity of planning for the transition to peacetime conditions. Each of these bodies set up its own planning committee and these two committees cooperated closely.

The studies of the Board and the Standards Council and of their respective committees very early led to some important general conclusions. One of these was that by having limited its work to the engineering field, the ASA was in danger of becoming too narrow, and that it needed to cultivate other fields in which the need for standards was as great or greater than those in which it was already operating.

There was urgent need of ASA's doing much more vigorous and effective work in standards for consumer goods. The belief is widespread that standards for goods sold at retail are bound to undergo extensive development in the next few years.

Likewise there was agreement on every hand that the ASA should play a more active role in international cooperation and that it should join in a vigorous effort to bring about a consolidated and more effective international program.

Still greater importance was given to these studies of the Board and Council as a result of the work of the Policy Committee on Standards headed by Charles E. Wilson of the General Electric Company. This committee, appointed by the Secretary of Commerce, recommended an intensified program of cooperation between the Department of Commerce and the American Standards Association. The report was approved by Secretary Wallace and was accepted by the ASA. With a single modification, Secretary Harriman has reaffirmed the program and has asked the Policy Committee to continue as a body advisory to the Department and also to continue its liaison activities with the Department and the ASA. The Committee has agreed to do so.

The Committee said in its report:

"The Committee believes that standards activities which involve negotiation, opinion, judgment, or compromise, should be developed through individual and joint efforts of technical, manufacturing, merchandising, and consumer groups.

"The Committee also believes that these efforts will need to be coordinated and promoted through a disinterested private agency organized to function in the broad public interest. It appears that this function can most logically be fulfilled by the American Standards Association.

"The Committee further believes: that the scope of the American Standards Association should be broadened so that it can handle any standards or standardization project which deserves national recognition, whether for raw materials, intermediate goods, production goods, consumer goods, or for safety or for engineering or for commercial transactions; that the American Standards Association should be modified and strengthened so that it can manage this suggested broad program effectively; that the Association must make sure it includes in its activities all groups entitled to a voice in the adoption of standards as well

as those competent to advise on consumer reactions; and that the American Standards Association maintain itself as a truly independent association privately financed, accomplishing its standards clearance and standards promotion voluntarily, with the full participation of all interests including those of the consumer."

Steps Forward

Broadened Scope. During the war years these and other policies were implemented by a few very simple changes in the constitution and by-laws. The phrase "in those fields in which engineering methods apply" was eliminated from section C2.1 of the constitution, which now reads "to provide systematic means by which organizations concerned with standardization work may cooperate in establishing American Standards, to the end that duplication of work and the promulgation of conflicting standards may be avoided." This enables the ASA to handle any standard or standards project which deserves national recognition.

Strengthening Correlating Committees. The Standards Council had become overburdened with the details of supervising the operation of the technical projects. Through a series of step-by-step decisions, a policy of decentralization has been carried out by delegating the bulk of this work to correlating committees and to the Board of Examination which now supervises a large number of miscellaneous projects. This delegation of authority includes the authorization of new projects, the defining of scopes of projects, and approval of personnel of committees. All such actions are reported to the Standards Council and are subject to appeal to the Council in case of controversy. This delegation of the supervision of technical projects to the correlating committees and the Board of Examination has been carried out by adding a new article to the By-Laws (Article B4).

Board of Review. This policy is now being extended by setting up a judicial "Board of Review." The Standards Council is delegating to this new Board the approval of standards which have been developed under the Sectional Committee Method.

This delegation of the approval of standards required an amendment to the constitution which has been carried out in section C7.3 which defines the functions of the Council.

Consensus Principle. A new article has been added to the constitution defining an American Standard: "An American Standard implies a consensus of those substantially concerned with its scope and provisions. The consensus principle extends to the initiation of work under the procedure of the Association, to the method of work to be followed, and to the final approval of the standard." (Article C3).

Planning of Programs. The great bulk of American Standards have been developed on a basis of expediency by their committees and sponsors. That is, each standard has been developed as a result of very specific difficulties that have arisen in the industries to which it applies. (There have, of course, been cases of carefully planned programs, such as the early safety code program, the project on preferred numbers, and a few others.) Many, if not most, of these difficulties have in the past involved controversies which have been done away with by the creation of the standard.

This process leads to an unplanned mosaic of standards for each industry. During the many discussions leading to these various changes in ASA for postwar work the policy has become thoroughly established that correlating committees shall be free to develop planned programs, so that an industry may use the ASA facilities to develop a planned mosaic of standards if it so desires. This principle has been implemented in the constitution by stating that one of the objects of the ASA is "to stimulate the work of existing committees and other organizations competent to formulate standards suitable for approval as American Standards, and to bring about the establishment of committees or organizations for this purpose where they do not already exist." (Section C2.2).

Correlating Committees as Sponsors. Another principle which has become clarified during these discussions is that a correlating committee may act as sponsor for a project when it is the desire of the interested cooperating bodies to participate in this way. This was specifically provided in the constitution of the Electrical Standards Committee. The principle is now available to other correlating committees. Any correlating committee may report its intention to assign the sponsorship of a committee to itself and obtain definite approval by the Standards Council under section B4.3 of the By-Laws. In view of the fact that a sponsor acts in an administrative capacity, however, the Council has decided that "in a case where a correlating committee sponsors a project the correlating committee should assign its judicial functions to the Board of Examination or a special committee appointed by the Council for this purpose."

New Correlating Committees. The various discussions have clarified and emphasized the policy that a new correlating committee shall be organized in any field as soon as the cooperating bodies in that field feel that their work will be advanced thereby.

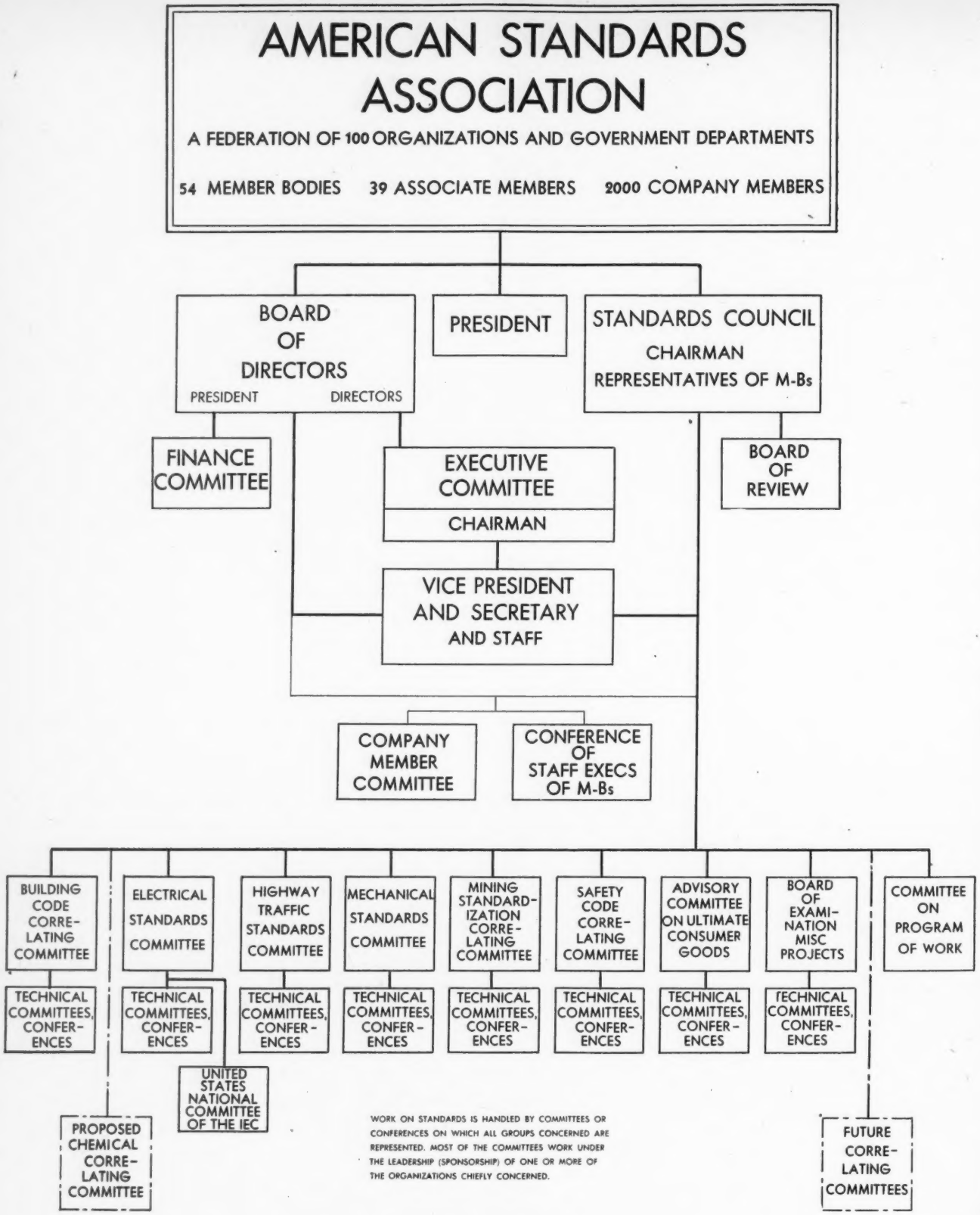
While these various changes have freed the Standards Council from a large amount of detailed work it has, by centering policy matters more effectively in the Council, placed increased responsibility upon Council members as representatives of the Member-Bodies. Furthermore, all decisions of correlating committees, the Board of Examination, and the Board of Review, are subject to appeal to the Council.

Every effort has been made to safeguard the rights of Member-Bodies and sponsors, to speed the work, and, at the same time, make it more effective throughout.

Members-at-Large on Board. All of the foregoing improvements have to do with the project work and with the operations of the Standards Council and its subsidiary bodies. A number of innovations have been made in other important matters. The constitution has been changed to provide for three members-at-large on the Board. In order to strengthen the work on consumer goods the Board has filled these positions for the present with a manufacturer of consumer goods, a retailer, and a consumer leader.

Company Member Committee. The former Company Member Forum, whose main function had been the interchange of experience between the standards departments of company members, has been re-activated with both its scope and membership enlarged. Its name has been changed to Company Member Committee. It is already carrying on an active program.

A principal function of this group is the evaluation of standards from the point of view of the corporate consumer. It seems to be meeting a hitherto unfilled need. It provides a forum for corporate consumers to


AMERICAN STANDARDS ASSOCIATION
A FEDERATION OF 100 ORGANIZATIONS AND GOVERNMENT DEPARTMENTS
54 MEMBER BODIES
39 ASSOCIATE MEMBERS
2000 COMPANY MEMBERS
BOARD OF DIRECTORS
PRESIDENT
DIRECTORS
PRESIDENT
STANDARDS COUNCIL
CHAIRMAN
REPRESENTATIVES OF M-Bs
FINANCE COMMITTEE
EXECUTIVE COMMITTEE
CHAIRMAN
BOARD OF REVIEW
VICE PRESIDENT AND SECRETARY AND STAFF
COMPANY MEMBER COMMITTEE
CONFERENCE OF STAFF EXECS OF M-Bs
BUILDING CODE CORRELATING COMMITTEE
ELECTRICAL STANDARDS COMMITTEE
HIGHWAY TRAFFIC STANDARDS COMMITTEE
MECHANICAL STANDARDS COMMITTEE
MINING STANDARDIZATION CORRELATING COMMITTEE
SAFETY CODE CORRELATING COMMITTEE
ADVISORY COMMITTEE ON ULTIMATE CONSUMER GOODS
BOARD OF EXAMINATION MISC PROJECTS
COMMITTEE ON PROGRAM OF WORK
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
TECHNICAL COMMITTEES, CONFERENCES
UNITED STATES NATIONAL COMMITTEE OF THE IEC
PROPOSED CHEMICAL CORRELATING COMMITTEE
FUTURE CORRELATING COMMITTEES
WORK ON STANDARDS IS HANDLED BY COMMITTEES OR CONFERENCES ON WHICH ALL GROUPS CONCERNED ARE REPRESENTED. MOST OF THE COMMITTEES WORK UNDER THE LEADERSHIP (SPONSORSHIP) OF ONE OR MORE OF THE ORGANIZATIONS CHIEFLY CONCERNED.

ASA ORGANIZATION

cooperate in the formulation and presentation of the viewpoint of corporate users, thus balancing, in a way, the similar function performed by the trade association for corporate producers.

Conference of Staff Executives of Member-Bodies. This Conference has been organized and is functioning as a forum of the staff executives of Member-Bodies and Associate Members for the purpose of promoting better understanding among association executives concerning the American standardization movement and the purposes, organization, policy, and procedures of the ASA. It provides a means for such staff executives to discuss matters of mutual interest to the Association and its Member-Bodies and Associate Members.

Certification and Labeling. American Standard Practice for Certification Procedures is now before the Standards Council for approval. This standard is intended to set forth the fundamental principles which should be the basis of any certification system if it is to be in the best interests of the consumer, distributor, and producer.

A committee of the Board is studying the whole subject of certification and labeling from the point of view of the possible functioning of the ASA in a general coordinated program of certification and labeling on a national scale.

The National Electrical Manufacturers Association has issued tentatively a policy of that Association for testing and certification by independent agencies. In this statement, NEMA expresses the view that there should be a coordinated general plan operated on a national scale and that the ASA should tool up to function in a judicial advisory capacity in the operation of such a plan.

A Federal Charter for ASA? Another committee of the Board has made an elaborate study in regard to incorporation under a Federal charter. This subject has been discussed in a conference of Member-Bodies and it is planned to hold a second such conference in the near future.

Increase in Membership. Since 1941, ASA Member-Bodies have increased in number from 42 (representing a total of 47 national organizations) to 54 (a total of 61 national organizations); Associate Members from 29 to 39; and the total number of national organizations in these groups from 76 to 100. [The one hundredth organization, Portland Cement Association, has come in as a Member-Body just as we go to press.]

Staff. The increased financial support available during the last year has made it possible for the Association to greatly enlarge its technical staff—from five before the war to sixteen at the present time. This makes it possible to render much more help to sponsors and to sectional committees. In response to requests, ASA engineers are now serving as secretaries for many sectional committees, thus helping to speed up the work of preparing standards.

Not only has the enlarged staff meant increased service in those fields which are already well established—mechanical engineering, electrical engineering, building, and safety, for example—but it also means that entirely new fields are now being serviced through the ASA.

An engineer is now giving full time to international work; and another, well acquainted with a number of languages, is providing special technical services to working committees, sponsors, and member organizations. An architect has been added for the work on building codes and building standards. A new comprehensive project on office standards is requiring nearly the full-time service of an engineer. Two technicians are devoting full time to consumer goods standards.

A major addition to the staff has been that of the assistant to the chairman of the Executive Committee who, like the chairman, is discussing the significance of voluntary standards with first-line industrial executives, and thus enlisting their cooperation and support. An experienced writer has been added as Director of Information.

Consumer Goods. There is a widespread desire for the extensive development of standards for consumer goods. No field of standardization presents greater problems. As has already been indicated, this is one of the fields in which ASA has been tooling up, both in staff and in securing representation from consumer groups, retailers, and manufacturers.

Some wartime standards are being converted for peacetime use. For example, standards for women's industrial clothes are providing data for specifications for women's work clothing and uniforms. Work on the electrical appliances is being reorganized and extended after a lapse during the war years. A special committee is reviewing proposals for new projects. The sectional committee on color fastness has enlarged its scope to include all textile test methods. Considerable interest has been aroused by the proposal for international work in textile test methods.

Editing and Publishing of Standards. In response to increasing requests from sponsors for assistance in the editing and publication of standards, one member of the staff is giving full time to this work. An editorial manual, in draft form, has been prepared and widely circulated for comment and criticisms. This document has met with an enthusiastic response and some of the methods outlined in it have already been adopted by governmental and technical agencies. A final edition is now in preparation. The expansion of the Editorial Department has enabled the ASA to make available to sponsors and committees the services of personnel capable of giving editorial advice on drafts and standards, proofreading, and complete graphic processing. Several sponsors have turned over the publication of standards to the ASA.

Office Services. Through the addition of new personnel and the purchase of more efficient equipment in the service departments of the Association (files, typing, mailing, and multilith departments) a greatly increased amount of duplicated material is being issued and the tempo of the Association in supplying drafts and technical data for committee use has been stepped up enormously.

The technical work of the ASA has always grown faster than its resources. Its growth has been healthy. The present tooling up and streamlining of methods is an effort to meet the responsibilities and needs which have been widely recognized by government and industry.

ISO and IEC At United Nations

The International Organization for Standardization and the International Electrotechnical Commission were represented at the Conference of Voluntary International Organizations which was held under the auspices of the Department of Public Information of the United Nations which met at Lake Success, New York, February 10 through 14.

Columbia University Starts Course in Standardization

RECOGNIZING that standardization is one of the important tools of the industrial engineer, Columbia University has appointed Dr John Gaillard, mechanical engineer of the American Standards Association, as a lecturer to give a post-graduate course on industrial standardization in the Department of Industrial Engineering and Management. Dr Gaillard will give 14 lectures during the spring session, 1947. As far as the American Standards Association knows, this is the first time that an American university has organized a course especially devoted to industrial standardization.

According to the Bulletin of Information on the School of Engineering published by Columbia University, "the field of the industrial engineer is now established as that of the process and production expert engaged in planning, organizing, improving, managing, and operating various processes and machines for producing manufactured products of all kinds and varieties. Besides, industrial engineers are called upon to plan or replan the management, operation, and organization of entire enterprises."

Professor Robert T. Livingston is head of Columbia University's Department of Industrial Engineering and Management.

The 14 lectures will cover the following subjects:

(1) Evolution of standardization. Types of standards. Significance of the performance standard and the unit of measurement. Technical and managerial elements in standards. Relation of industrial engineer to standardization work in a manufacturing concern.

(2) Essential functions of standardization. Primary function (purpose): coordination. Necessary function (means): temporary stabilization. Progress-time curve of the development of an industrial product. When standardization can begin.

(3) Definition and characteristics of a standard.

(4) Nominal values, tolerances, and limits. General significance and special application to dimensional standards. Degree of accuracy. Manufacturing limits. Interchangeability of parts. Selective assembly.

(5) Inspection of mechanical components. Limit gages. Reference temperature. Units and standards of length. Definition of yard and meter. Light-wave basis. Inch-millimeter conversion ratio for industrial use (international). Gage blocks.

(6) Limit systems applied to cylindrical fits. Definitions of terms. Basic sizes. Required and permissible extreme conditions of fit. Classes and grades of fit. Basic hole and basic shaft system.

(7) Gaging specifications. Gagemaker's tolerances and permissible gage wear. Location of gagemaker's tolerances in relation to limits of workpiece. American, British, and Continental viewpoints. Dial, electric, and air gages.

(8) Technique of setting up industrial standards. Compromise between strictness and flexibility. Periodic revision. Transition from one standard to another. Unification of standards.

(9) Different forms of industrial standardization. Simplification of existing variety by elimination of types and sizes. Redesign of existing series of products to combine reduction of variety with technical improvement. Use of Preferred Numbers (international). Establishing standards as a basis for coordination of future activities.

(10) Standardization in a manufacturing concern in the mechanical field. Development of company standards through cooperation of the engineering, manufacturing, inspection, testing, purchasing, and sales departments. Company standards committee. Position of standards engineer. Company standards department. Relations with outside standardization work.

(11) The four stages of industrial standardization work: in a company, in a trade association or technical society, on a national scale, and on an international scale. The work of the American Standards Association (ASA) and similar foreign national standards bodies. The International Standards Association (1926-1942). American-British-Canadian efforts toward unification of screw threads. The new International Organization for Standardization (ISO).

(12) American Standards. Review of projects of interest to the industrial engineer, developed under the procedure of the American Standards Association. (Screw threads; bolts, nuts, screws and rivets; cylindrical fits; tools and machine tool elements; pipe and tubing; pipe flanges and fittings; drawings and drafting room practice; Preferred Numbers; material specifications; statistical quality control; etc.)

(13) Review of type cases of standardization work done by industrial concerns in the United States.

(14) General review and summary.

New Representatives On ASA Standards Council

Changes in the membership of the ASA Standards Council have resulted in the appointment of the following new representatives.

American Gas Association—

Earl L. Griffiths, assistant vice-president, Consolidated Edison Company of New York, has been designated to succeed S. P. Cobb as alternate representative.

American Society for Testing Materials—

J. H. Foote, Commonwealth & Southern Corporation, is the newest alternate for ASTM and a member of the ASA Sectional Committee on Insulated Wires and Cables, C8; Power Switchgear, C37; Domestic Electric Flatirons, C70; Household Electric Ranges, C71; Electric Water Heaters, C72; and Copper Wire, H4.

National Fire Protection Association—

M. M. Brandon, electrical engineer, Underwriters' Laboratories, has been appointed alternate for C. R. Welborn. He is already an active participant in the work of the ASA through his membership on the United States National Committee of the International Electrotechnical Commission; the Electrical Standards Committee; and the sectional committees on Pipe Thread, B2; National Electrical Code, C1; Insulated Wires and Cables, C8; Rolled Threads for Screw Shells of Electric Sockets and Lamp Bases, C44; Electric Welding Apparatus, C52; Domestic Electric Flatirons, C70; Household Electric Ranges, C71; and Electric Water Heaters, C72.

U. S. Department of Agriculture—

James M. McCurley, chief, Technical Standards Division, Rural Electrification Administration, has been designated as alternate succeeding C. G. Kilborne.

U. S. Department of Labor—

William G. Marks, chief, Safety and Health Branch, replaces R. J. Kennedy as an alternate. He is also an alternate on the Safety Code Correlating Committee.

Latest in Machine Tool Series

Courtesy General Motors Corp

This picture shows some examples of involute-splined transmission parts

Involute Spline Standard

By S. O. Bjornberg

Includes range of sizes covering largest industrial drives to finest splines used in aircraft and in precision instruments

CULMINATING the thinking and development work carried out by experts in many fields for almost 25 years, the new edition of the American Standard on Involute Splines[1] marks an important advance in the simplification of tool design, in production economy, and in the simplification and standardization of hobs and tools.

Since the involute spline standard cuts across the interests of all manufacturing industries, designers and production executives alike can approach its immediate adoption with a feeling of full confidence in view of the long period of consideration and experimental work which preceded the approval of this present standard.

The use of involute splines is not new. Back in the 1920's the automotive industries began trying out involute spline couplings. These splines were based on gear tooth proportions, mainly because the gear-cutting tools were available for use. Results indicated that better fits were obtainable than with the then current straight key spline.

It was evident, however, that further study was required in regard to loading and strength characteristics of the splines and that designs that would lend themselves to better tooling, particularly broaches, would have to be considered.

Therefore, in 1930, Technical Committee 13 of the ASA Sectional Committee on Small Tools and Machine Tool Elements, B5, was organized to investigate general spline practice

S. O. Bjornberg, *consulting engineer of the Illinois Tool Works, is chairman of Subcommittee 13 on Involute Splines and a member-at-large on the ASA Sectional Committee on Small Tools and Machine Tool Elements, B5.*

[1] Sponsors for the development of this standard are the American Society of Mechanical Engineers, the National Machine Tool Builders' Association, the Society of Automotive Engineers, Inc, and the American Gear Manufacturers Association.

and to develop recommendations for a standard practice.

First consideration was given to an American Standard for straight side splines, but the trend of industry toward the use of involute splines prompted the committee to substitute the development of an involute spline standard as the logical and desired objective.

During the depression years very little work was accomplished, and it was not until 1939 that a standard on involute splines was approved by the American Standards Association and designated as American Standard B5.15-1939.

The main characteristics of that standard were:

The number of splines were restricted to 6-10-16-24-36 tooth splines.

Three depths of spline keys were used—shallow, intermediate, and deep.

Metric bores common to antifriction bearing practice formed the basis for size ranges covered by the standard.

Two hundred eighty-five (285) hobs were required to cut all sizes of splined shafts in the standard.

30-degree pressure angle was adopted for all involute splines.

Side bearing fits, only, were considered standard.

After several years of use, it was felt that the standard was not flexible enough to meet all industrial requirements. Therefore, in 1941, Technical Committee 13 was again delegated to investigate the possibility of adapting the standard for the purposes intended through the development of necessary revisions, or extensions.

As a result of continuous investigation and study of industrial requirements for improved spline elements, the new American Standard for Involute Splines, B5.15-1946, has been approved by the sponsor bodies and the American Standards Association.

Main Characteristics of New Standard

The main characteristics of this new standard are:

Size ranges and pitches—

Size ranges are not predicated on metric bearing bores in 5-mm steps.

The range is covered from one/two (1/2) diametral pitch to 48/96 dimetral pitch.

The number of spline keys are not restricted to 6-10-16-24 and 36 as in the old standard.

Every number of spline keys from 6 to 50 may be used in any pitch.

There are 15 diametral pitches as follows: 1/2, 2.5/5, 3/6, 4/8, 5/10, 6/12, 8/16, 10/20, 12/24, 16/32, 20/40, 24/48, 32/64, 40/80, 48/96.

This encompasses the gamut of commercial shaft sizes from the largest industrial drives to the finest splines for aircraft and instruments.

Fits—

There are three types of fits:

Major diameter—On the major diameter where fit is controlled by varying the major diameter of the external spline.

Side bearing—On the sides of teeth where fit is controlled by varying tooth thickness.

Minor diameter—On the minor diameter where fit is controlled by varying the minor diameter of the internal splines.

In addition, there are three classes of fits for each type, namely, sliding, close, press.

Pressure angle—

Pressure angle is 30-degree for all splines.

Spline selections for antifriction bearings—

A table is given listing the nearest number of teeth and major diameter under bearing bore.

Manufacturers of machine tools and the manufacturing companies using these tools took an active part in the work of Subcommittee 13. The importance which they considered the work to have is reflected in the fact that the new standard has already been put to use. To mention several examples, the Chrysler Motor Company has adopted it as a Chrysler Drafting and Design Standard, it has been adopted as a General Motors Engineering Standard, and the Ford Motor Company announces that it is using involute splines made in accordance with the American Standard. The Navy Bureau of Ordnance is approving involute splines made in accordance with the American Standard specifications in Naval ordnance materiel. In addition, the Illinois Tool Works advertises that hobs, shaper cutters, and broaches made according to the new American Standard B5.15-1946 are now available from stock.

The American Standard Involute Splines, B5.15-1946, can be obtained from the American Standards Association at $1.00 per copy.

Measurement with pins—

Formulae for calculating pin measurements are given.

Also tables giving pin sizes and measurement values for each pitch and number of teeth for both external and internal splines.

Torque capacities—

Formulae are given for loads and shear stress applicable to all pitches and numbers of teeth.

Tolerances for external and internal splines—

These are given in the tables and are determined by manufacturing experience and not by proportions.

Involute spline hobs—

Fifteen (15) hobs, one for each diametral pitch, are all that are needed to cover all spline shafts for major diameter and minor diameter and side bearing fits.

For the design with full fillet side bearing fit, fifteen (15) hobs with round crested teeth are required.

Tools for internal teeth—

For the smaller diameter splines the internal fitting is customarily broached. The design of the broach will essentially be controlled by the material and length of cut as well as the tooth data for the specific part to be broached.

Broaches will be used up to such a diameter of spline as will permit the employment of a practical shaper cutter.

There is a range thereafter within which the choice of shaping or broaching the work will depend upon the volume to be produced.

As the size of spline increases, the use of a shaper cutter becomes easier and the cost of the broach becomes greater so that in the large splines the shaper cutter entirely supplants the broach.

The shaper cutter provides a degree of flexibility approaching that granted by the hob, in that a single cutter will cut correctly all numbers of teeth upward from that for which it was designed. Where the number of teeth in the cutter is twenty (20) or more, it can also be used for cutting the spline shafts of any number of teeth.

Thus it is seen that a system of involute splines using varying diametral pitches for control of tooth size is broadly flexible in application with respect to both design and manufacturing considerations.

A further bid for popularity by this standard is seen in the guidance offered to the designers, makers, and inspectors of these fittings, with respect to such items as dimensioning of drawings, clearances for fits, tolerances on dimensions, selection of tools, and methods of inspection. These features combine to make a standard which is a major contribution to industry in the field of keyed coupling standardization.

Five New Members Elected To ASA Board of Directors

Represent automotive and iron and steel industries, railroads, fire prevention, and mechanical engineering

FIVE new members have been elected to the ASA Board of Directors, each to serve for a three-year period. They are replacing former directors of the board whose terms have expired. The American Standards Association welcomes:

J. H. Hunt, director, New Devices Section, General Motors Corporation, who will represent the Society of Automotive Engineers;

J. H. McElhinney, vice-president, Wheeling Steel Corporation, who will represent the American Iron and Steel Institute;

R. L. Pearson, vice-president, New York, New Haven and Hartford Railroad Company, who will represent the Association of American Railroads;

Curtis W. Pierce, president, National Fire Protection Association, and president, Factory Insurance Association, who will represent the Fire Protection Group;

Auguste G. Pratt, president, Babcock & Wilcox Company, who will represent the American Society of Mechanical Engineers.

In addition to these five members, R. Oakley Kennedy, member-at-large, has been re-elected after serving for a short period to fill the unexpired term left by the death of William B. Warner, former president of McCall Corporation.

Mr Hunt has been engaged in engineering work with the General Motors Corporation since 1913, which includes several years with General Motors Research. As a past president of the Society of Automotive Engineers and a former member of its Council, he has been very active in the SAE. He has also served as chairman of the General Standards Committee from 1938 to 1945. In addition, Mr Hunt holds membership in the Institution of Automobile Engineers (British), the Engineering Society of Detroit, the American Physical Society, and is a fellow of the American Institute of Electrical Engineers.

Mr McElhinney was graduated from the University of Pittsburgh as a mechanical engineer and has spent all of his working life in the steel industries. His previous connections include the United Engineering and Foundry Company, Youngstown Sheet and Tube Company, and Lukens Steel Company. He has been vice-president in charge of operations of the Wheeling Steel Corporation since 1943.

Mr Pearson, vice-president of the New York, New Haven and Hartford Railroad Company, has held various positions in the Engineering and Operating Departments of his organization since his graduation from Swarthmore College.

Initial contact with the insurance field was made by Mr Pierce in 1900 when he took a position as draftsman in the inspection department of the Associated Factory Mutual Companies in Boston. In 1911, he joined the Continental Insurance Company with whom he continued to be associated until his election to the presidency of the Factory Insurance Association in 1942. At that time, he answered a call from the chief executives of Capital Stock Fire Insurance Companies to consolidate the then three independent associations into a nation-wide organization.

In 1941, Mr Pierce was elected by representatives of the Fire, Casualty and Boiler Insurance Companies as manager of the National Bureau for Industrial Protection. The functions of this bureau were to make available to all interested government agencies, during wartime, the technical information and services available through the insurance business of America.

Long active in affairs of the National Fire Protection Association as a member of the Board of Directors and as chairman of various executive committees, Mr Pierce was elected president of the Association at its Fiftieth Annual Convention last year.

Shortly after his graduation from Stevens Institute of Technology, Mr

(*Continued on page* 75)

Top to bottom—R. Oakley Kennedy; J. H. McElhinney; R. L. Pearson; Curtis W. Pierce; Auguste G. Pratt

American Standard Letter Symbols

Uniform Language for Chemical Engineering

By J. H. Perry

THE first American Standard providing letter symbols for chemical engineering, just completed, is the result of many earlier standards which the American Institute of Chemical Engineers has prepared, through unofficial committees following its founding in 1908, and through its official committees since the first formal Institute committee was formed in 1932. The latest Institute standard, Standard System of Nomenclature for Chemical Engineering Unit Operations, was published in the April 25, 1944, issue of the *Transactions* of the American Institute of Chemical Engineers. It was the result of several years' work of the present Institute committee, the personnel of which is the same as the ASA subcommittee responsible for this first American Standard. The present American Standard is, therefore, the result of many years of intensive study by chemical engineers; the present subcommittee represents a total of more than 200 years' active experience in research, plant design and construction, teaching, and writing or editing of articles and books related to all phases of chemical engineering.

Subcommittee No. 12 of the ASA Sectional Committee on Letter Symbols and Abbreviations for Science and Engineering was organized in July 1943 on the recommendation of the late Dr Sanford A. Moss, vice chairman of the sectional committee, with the approval of the Council of the American Institute of Chemical Engineers. The work of this subcommittee was submitted to the members of ASA Sectional Committee Z10 for letter ballot vote. This vote was favorable and there followed a vote of approval by the five sponsor bodies: the American Association for the Advancement of Science, the American Institute of Electrical Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the American Society for Engineering Education. The proposed standard was then presented to the American Standards Association in May 1946, which approved and designated the letter symbols as American Standard on September 26, 1946.

In publication of the standard, the subcommittee has insisted that periods be used after the abbreviations (employing lower-case characters) identifying the standard letter symbols, as it is convinced that they contribute to clear understanding as much as other marks of punctuation and therefore aid the reader and obviate hesitation on his part in defining an unpunctuated abbreviation.[1] Many abbreviations do not require periods for ready understanding but many do require such periods and such necessity for periods varies among all readers of technical writings. The economy of a typesetter's

[1] NOTE: In the new American Standard Letter Symbols for Chemical Engineering, Z10.12-1946, it is explained: "The letter symbols in the following list are the part of this publication which has been approved as an American Standard according to procedure of the American Standards Association. The units, and the abbreviations for them, in the list are recommendations of the American Institute of Chemical Engineers and do not constitute a part of the present American Standard." The American Standard Abbreviations for Scientific and Engineering Terms provides that periods are not used in abbreviations unless there is possibility of confusion—ED.

John H. Perry, Development Department, E. I. du Pont de Nemours & Company, Wilmington, Delaware, is chairman of Subcommittee No. 12 of the ASA Sectional Committee on Abbreviations and Letter Symbols for Science and Engineering, Z10.

Other members of this subcommittee which prepared the letter symbols for chemical engineering are:

T. H. Chilton, technical director, Development Engineering Division, Engineering Department, E. I. du Pont de Nemours & Company, Inc, Wilmington, Delaware

W. H. McAdams, professor, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts

W. L. McCabe, formerly head, Department of Chemical Engineering, Carnegie Institute of Technology, Pittsburgh, Pa.

F. J. Van Antwerpen, editor, *Chemical Engineering Progress,* American Institute of Chemical Engineers, New York, N. Y.

K. M. Watson, Department of Chemical Engineering, University of Wisconsin, Madison, Wisconsin.

During preparation of the standard, Professor O. A. Hougen, chairman, Department of Chemical Engineering, University of Wisconsin, and J. R. Callahan, associate editor, *Chemical Engineering,* McGraw-Hill Publishing Company, New York, were also members of the subcommittee.

time in not setting periods after abbreviations is, we believe, more than offset by the time required by a reader to decipher some abbreviations that have no periods. Most authorities require periods after abbreviations and this is for the good reason that a group of lower-case characters in a line of lower-case characters is expected to be readable, pronounceable, and meaningful unless marked in some way to indicate that it is an abbreviation. Webster's New International Dictionary does admit that there is a tendency to omit periods with certain classes of abbreviations, but these classes are mostly the letter abbreviations of U.S. governmental agencies, such as: ICC, WPA, NLRB, OPA, etc. These, when written as capitals in a line of lower-case characters, are readily distinguishable as being intended to be read as separate letters. The following headlines in the *New York Times* of a couple of years ago are admittedly confusing: TOP GOP COMMITTEE CHOSEN; MESA STRIKE SETTLED. Periods after letters in GOP and MESA would certainly clarify these headlines. The omission of periods after abbreviations has not found general acceptance, in the opinion of this subcommittee. Possibly such acceptance may be more general in the future but no sure prediction for or against such acceptance can be made by anyone now.

The subcommittee has studied carefully the arguments for the use of the slant bar, the word "per", and parentheses. It is convinced that the slant bar is commonly recognized as a shorthand symbol for the word "per" and its use maintains the mathematical relationship. Parentheses are required in the more complex dimensional statements.

The subcommittee has carefully considered also the use of the slant bar or "per" instead of the negative exponents. The use of negative exponents, we believe, prevents the necessary and usual correspondence of the seeing-reading-understanding sequence of use.

The divergences mentioned above and a few other, more minor, divergences from other American Standards have been necessary, in the opinion of the subcommittee, to meet definitely approved usages and wishes of the majority of chemical engineers and those other classes of engineers who do an appreciable amount of work in the chemical engineering field.

However, the present American Standard contains many instances of adjustment to, and inclusion of, letter symbols that are items of previously established American Standards. Some of the more important of these adjustments are the inclusion in the present standard of alternate symbols where necessary. These adjustments have been made after careful study by the subcommittee with the very helpful and patient detailed assistance of Dr Sanford A. Moss, the late zealous vice-chairman of ASA Sectional Committee Z10, throughout the completion of this standard.

It is always regrettable that there

"In preparing manuscripts, it is suggested that authors give careful attention to the use of symbols from this and other standard lists and to the principles here given." This is the first recommendation in the new American Standard Letter Symbols for Chemical Engineering, Z10.12-1946, just approved by the American Standards Association and published by the American Institute of Chemical Engineers. A letter symbol is a single character, with subscript or superscript if required, used to designate a physical magnitude in mathematical equations and expressions, and distinguished from abbreviations, mathematical signs and operators, graphical symbols, and chemical symbols as defined in the statement of general principles in the new standard. Recommendations for the use of superscripts, for resolving conflicts in the use of symbols, and for typography are included. The standard letter symbols themselves are classified under the headings: general; flow of fluids; heat transmission; evaporation, humidification, dehumidification; gas absorption and extraction; distillation; drying; classification, sedimentation, settling; filtration; screening and sampling; crystallization; centrifugation, crushing and grinding; and dimensionless numbers used in chemical engineering.

In preparing its recommendations for approval by the American Standards Association, a subcommittee of the ASA Sectional Committee on Letter Symbols and Abbreviations for Science and Engineering studied the symbols prepared by committees of the American Institute of Chemical Engineers over a number of years. The letter symbols recommended by the sectional committee were approved by the American Standards Association late in 1946 as the first American Standard Letter Symbols for Chemical Engineering.

This is the eighth standard in the series developed by the sectional committee under the sponsorship of such influential national associations as the American Association for the Advancement of Science; the American Institute of Electrical Engineers; the American Society of Civil Engineers; the American Society of Mechanical Engineers; and the American Society for Engineering Education. Three of the standards previously developed are now under revision, covering aeronautical symbols; mathematical symbols; and letter symbols for electrical quantities. Four of them are still in effect, all having been approved since 1941, although the sectional committee is now discussing whether further work should be done on them. The four that remain in effect cover:

Abbreviations for Scientific and Engineering Terms, Z10.1-1941 45¢
Letter Symbols for Hydraulics, Z10.2-1942 45¢
Letter Symbols for Mechanics of Solid Bodies, Z10.3-1942 50¢
Letter Symbols for Heat and Thermodynamics including Heat Flow, Z10.4-1943 30¢

Copies of the new American Standard Letter Symbols for Chemical Engineering, Z10.12-1946, are available at 50 cents each.

be any divergences from previously established American Standards but it is believed that the future inevitable revisions of all such standards will prove that the present divergences are only temporary differences and that full accord will be reached between all standards and between all branches of science and engineering. All progress in this field is evolutionary rather than revolutionary and the subcommittee believes that the present standard is a real milestone in the progress of standardization. The subcommittee believes this to be the case even though it and the other existing standards have not reached the goal of complete agreement and complete acceptance which will be the result of further work by the committees and of missionary work among all those who use these standards.

The desirability and necessity for the standardization of symbols used in chemical engineering need no defense. Although chemical engineering is a junior among the major branches of engineering, it has long since come of age and has long appreciated the need of standardization of the diverse symbols used in chemical engineering unit operations and unit processes.

Once a standard is prepared, its diffusion and acceptance to the point of universal and consistent use are the goals. In this process, improvements of the standard are inevitable both as regards changes and additions. Both this subcommittee and the American Institute of Chemical Engineers committee will continue work on revisions of the present standard. Criticism of the standard and especially suggestions for its improvement will be most welcome to the subcommittee.

Interest in Standards Grows As Basis for Increasing Sales

ARISING interest in standards for consumer goods as a means of increasing consumer good will and building larger markets has been noticeable in press reports involving a variety of organizations during the past month. Among these are the National Association of House Dress Manufacturers, the American Association of Textile Technologists, the Long Island Chemists Association, and the National Retail Dry Goods Association. In each case the concern with standards has centered around the desire of members of the organization that their peacetime services to customers shall be on a basis that will build greater good will and thereby increase sales.

Erwin Feldman
National Association of House Dress Manufacturers

The problem facing the sellers of consumer goods and services was stated succinctly by Erwin Feldman, Director-Counsel of the National Association of House Dress Manufacturers, when he said in a recent article in the *Daily News Record*, New York, "Much has already been said about the substandard quality of the 'ersatz' goods delivered during the war and the sooner we forget about that epoch the better. . . . We know that restrictions and regulations forced representative textile houses to offer qualities repugnant to their own standards but we see no reason for the continued offering of these products."

Mr Feldman's solution is to adopt minimum standards for fabrics based on their end-use, and to label them with symbols identifying fabric, quality, and performance. "These standards should be worked out with the aid of an impartial public agency such as the American Standards Association," he says. "The trade should adopt symbols for every fabric which would be a guide to fabric, quality, and performance.

"Our industry is ready to go ahead with such a program at the earliest possible moment; the sooner, the better," Mr Feldman declared. "Representing as we do the established label brands in the daytime dress industry, our motives are clear. We have earned our reputation by backing up our merchandise and any program which helps us strengthen our claims of serviceability adds that much prestige."

(The organization meeting of a sectional committee formed to develop standards for women's work clothing was held by the American Standards Association February 11, 1947 as one of the first steps toward undertaking work of this type.)

Another move in this same direction was taken at a conference of the National Retail Dry Goods Association and the Textile Square Club in New York, one of the features of the meeting being an exhibit sponsored by the National Institute of Cleaning and Dyeing. The subject of the conference was elimination of garment and textile faults. It was the first step on the part of textile, dry cleaning, and retail groups in returning to a program which had been well under way before the war. During the war, it was explained at the meeting, shortage of material and limitations on production had brought into the market many garments which would not stand dry cleaning. New fabrics of different types have now made it necessary for the drycleaning industry and the textile and garment makers to analyze the problem together and reach some agreement on methods whereby not only the purchaser will have some assurance

(*Continued on page* 66)

Gary Wagner

Effect of dry cleaning on inferior dyes exhibited by National Institute of Cleaning and Dyeing.

NEMA Formulates Policy on Testing and Certification Labeling

This tentative statement of policy regarding standards, testing, and certification labeling has been released for publication, to obtain comment and criticism, by the Board of Governors of the National Electrical Manufacturers Association

PREFACE

THREE years ago, the American Standards Association adopted for a trial period Z34.1, Proposed American Standard Practice in Public Approval and Certification Procedure[1]. This was intended to set up the minimum requirements of any program of certification labeling which would give adequate protection to the purchasing public.

Any such program involves questions of policy and procedure which must be formulated. In order to clarify its thinking in relation to the American Standards Association, its policies in connection with NEMA Standards and the function of the sponsor and the American Standards Association under any certification labeling program, the attached tentative statement of policy has been prepared by NEMA for submission to the NEMA membership.

The Board of NEMA, which has endorsed (April 9, 1946) this tentative statement, will welcome any comments or criticism.

TENTATIVE STATEMENT OF NEMA POLICY REGARDING STANDARDS, TESTING, AND CERTIFICATION LABELING

Part I

Standards

1. Does NEMA believe in standards for electrical products?

The objects of NEMA are to "promote and further the interests of manufacturers of electrical products and the interests of the public in manufacturing, engineering, safety, transportation and other problems of the electrical industry, and to this end, among other things:

"1. To increase the amount and improve the quality of electrical service to the public;
"2. To promote the standardization of electrical products.
. . . . "

In practice, NEMA and its predecessors have been carrying on standardization activity for many years. Under the NEMA By-Laws a complete policy and procedure has been established for the conduct of standardization activities, providing not only for the development and adoption of NEMA Standards, but also for cooperation in the development of standards in conjunction with other standardizing bodies.

Article V of the By-Laws states that the purpose of NEMA Standards is as follows:

"National Electrical Manufacturers Association Standards are adopted in the public interest and are designed to eliminate misunderstandings between the manufacturer and the purchaser and to assist the purchaser in selecting and obtaining without delay the proper product for its particular need. Existence of a National Electrical Manufacturers Association Standard does not in any respect preclude any member or nonmember from manufacturing or selling products not conforming to the standard."

The definition of a NEMA Standard in the NEMA By-Laws reads as follows:

"*Section 1. Definition of a Standard.* A Standard of the National Electrical Manufacturers Association defines a product, process or procedure with reference to one or more of the following: nomenclature, composition, construction, dimensions, tolerances, safety, operating characteristics, performance, quality, rating, testing and the service for which designed."

Besides 55 NEMA Standards published in printed form, there are hundreds of other standards published in Approved Standards Bulletin form. In addition to the development and adoption of NEMA Standards, NEMA participates jointly or otherwise in the standardization activities of other standardizing bodies, there being NEMA representatives on 423 other outside or joint committees.

In general, electrical manufacturers, as represented by NEMA, believe in the value of standards for all products where such standardization will facilitate repetitive quantity manufacture or will eliminate misunderstanding between the manufacturer and the purchaser as to what is being sold and purchased or will

[1] This draft standard, now entitled Proposed American Standard Practice for Certification Procedures, Z34.1, is before the ASA Standards Council for approval as American Standard.

give the purchaser a definite basis for evaluating similar products sold by different manufacturers.

2. Does NEMA believe in standard methods of test for electrical products, as related to the corresponding product standard?

Yes. Many NEMA product standards include, along with the product standard or as a separate related standard, a standard method of test.

In the case of many electrical products this is necessary because the method of procedure used for testing is so closely related to the product standard that a slight variation in test procedures, if used by an independent testing laboratory or by different manufacturers, may produce diverse results.

As regards many electrical products a standard method of test has been adopted by the American Society for Testing Materials, Underwriters' Laboratories, Inc, American Institute of Electrical Engineers, or other agencies.

3. Should NEMA offer its standards to the American Standards Association?

Yes, NEMA approves the all-party-at-interest procedure provided for by American Standards Association as sound and in the public interest.

NEMA should offer and recommend its standards to ASA as a helpful contribution to the work of ASA in the effort to develop American Standards. In some cases it may be desirable to initiate the project in ASA but this decision rests with the subdivision or subdivisions concerned.

Among factors which must be given consideration are: whether the standard is fundamental or basic, not subject to frequent change; whether changes are frequently made to reflect advances or improvements in the art, in the materials used, or in the technique of manufacture; or whether the product has been developed to a point where frequent changes are not anticipated.

4. Should standards intended for protection of the public from fire and casualty hazards be submitted to ASA?

Yes, NEMA believes that any standards intended for protection of the public from fire and casualty hazards should be submitted to, or developed through the procedures of, ASA and approved as American Standards.

Part II

Informative and Certification Labeling

1. How does NEMA define labeling?

NEMA classifies labeling as follows:

(*a*) *Informative and Descriptive Labeling or Statements*

Informative and descriptive labels or statements include any type of label, nameplate or tag placed on or attached to the product or a container by the individual manufacturer, or any statement made or advertised by the individual manufacturer in respect to the specifications which his product meets. Such informative and descriptive labels or statements are backed by the integrity and guarantee of the individual manufacturer.

Informative or descriptive labels or statements should embody sufficient information to give the buyer adequate knowledge regarding the product and its use or care. The minimum data that should be placed on any informative or descriptive label, nameplate or tag, or in any informative or descriptive statement, is properly a subject for industry standardization.

(*b*) *Certification Labeling Based upon Tests of an Independent Testing Agency*

Certification labeling based upon tests of an independent testing laboratory is intended to protect the buyer regarding the quality, rating, performance or specification of the product sold, or to protect him in respect to the fire or casualty hazard involved in its use.

Such certification labeling involves some procedure which is independent of and in addition to the tests and representations of the manufacturer. Any program involving such certification labeling should be under sponsorship, jurisdiction and procedures which meet the requirements of the ASA Standard on Valid Certification (Z34.1).

2. Does NEMA believe in informative and descriptive labeling?

NEMA believes in informative and descriptive labeling as described in II, 1(*a*), above.

NEMA believes that most electrical products and particularly electrical appliances should carry an informative and descriptive label, providing information adequate to the needs of the consumer, and that such adequate informative and descriptive labeling is not only desirable but is also becoming well-nigh necessary.

3. Does NEMA believe in certification labeling based upon tests of an independent testing agency?

In the interests of adequate protection for the public, where fire or casualty hazards are involved, NEMA is in favor of certification labeling or listing of electrical products where at least the testing is performed by a laboratory which is independent of the manufacturers.

In fields other than those relating to fire and casualty hazards, NEMA should undertake to develop an adequate program, which meets the full requirements of Z34.1, wherever there is real need for certification labeling in respect to any electrical product.

4. Does NEMA believe that any program of certification labeling should be carried on in accordance with ASA Standard on Valid Certification (Z34.1)?

NEMA has voted in favor of the ASA Recommended Practice for Approval on Valid Certification Procedure and believes that any program of certification labeling should meet the requirements of Z34.1.

5. Who should determine whether any program of certification labeling meets the requirements of Z34.1?

NEMA believes that a nationally recognized independent agency should make such an investigation, and should certify its findings to the sponsor.[2]

Without such an investigation by a nationally recognized independent agency, the purchasing public cannot have assurance as to the adequacy of

[2] The sponsor of a certification labeling program should be the industry or trade association whose scope embraces the product or products included in the program. However, where there is no qualifying industry or trade association, then, upon written application, ASA may certify a single-purpose organization employed or established for the purpose, a group of manufacturers, or even a single manufacturer of a given product as sponsor of a certification labeling program, provided the proposed certification labeling program meets the requirements of Z34.1, including the question of the responsibility and qualifications of such sponsor.

the program and as to the qualifications and responsibility of the testing and sponsoring agencies involved.

6. What agency should undertake the investigation referred to in Item 5 and certify its findings to the sponsor?

NEMA believes that the American Standards Association itself should undertake this investigation and certify its findings to the sponsor of the proposed program.

It is in the interest of the purchasing public that uniform procedures and policies be followed in making such investigations, and this can only be assured if a single agency is used. The ASA logically qualifies as the single agency to undertake these investigations.

NEMA believes that, while this would be a considerable responsibility for ASA, nevertheless, the ASA should undertake this responsibility.

7. Specifically, what part should ASA play in making its investigations and in certifying its findings to the sponsor?

NEMA believes that ASA should itself organize to make such initial investigation as will determine whether the program for certification labeling meets the requirements of Z34.1, and certify its findings to the sponsor. Reference to Z34.1 should not be made by the sponsor without such investigation and approval by ASA. If in the judgment of ASA the program does meet the requirements of Z34.1, ASA should authorize the sponsor so to indicate to the purchasing public by some form of permissive statement or label. To avoid confusion with other labels which may be used relating to standards of performance or test in respect to the product itself, ASA should consider very carefully the exact form of any permissive statement or label which is used indicating that the program of certification labeling has been investigated by ASA and in its judgment meets the requirements of Z34.1.

NEMA believes that the ASA initial investigation should cover the full scope of Z34.1 and should pass on the qualification of the sponsor or certifying agency, on whether the product and testing standards used are nationally recognized, on the independence of the testing laboratory and its functioning, including the technical qualifications, equipment, sampling and follow-up, etc.

Forming the background for the statement concerning standards, testing, and certification labeling just issued by the National Electrical Manufacturers Association is a draft standard developed by a sectional committee of the American Standards Association. This draft standard, which has been circulated for trial and criticism for the past three years, defines the principles under which certification of commodities should be carried out if the certification is to be considered valid. The criticisms received have been considered by the committee, necessary amendments made and the proposed standard is now before the ASA Standards Council for approval.

Another ASA committee, a special committee of the ASA Board of Directors, is considering whether a coordinated general program of certification and labeling should be encouraged, and if so what relation the American Standards Association should have to such a general program. In its deliberations this committee is studying the certification work of the Canadian Standards Association (see page 42, INDUSTRIAL STANDARDIZATION, February, 1947), as well as that of important organizations in the United States.

The statement of the National Electrical Manufacturers Association is the first formal expression by any Member-Body of the American Standards Association concerning its attitude toward a coordinated national program for certification and labeling of commodities.

NEMA believes that ASA should not delegate to any interested party the function of making the initial investigation to determine whether the program for certification labeling or any part thereof meets the requirements of Z34.1.

After the initial investigation and approval, ASA cannot police the entire program when put into effect by the sponsor, but should carefully consider how it can safeguard the adequacy and continuing efficiency of the testing laboratory and what steps should be taken from time to time to do so. NEMA recommends that a Board of Visitors, independent of the interests involved, be appointed for such purpose.

NEMA believes that ASA should provide in its process of investigations and findings some equitable procedure for appeal.

8. Does NEMA believe that testing should be done by a testing laboratory or other agency which is completely independent of association control?

NEMA believes that any testing laboratory and its personnel employed or utilized by an association under an association-sponsored plan for certification labeling should be completely independent of control by the manufacturers whose products are involved—that is, that the testing, sampling and follow-up should not be done by members of an association staff or by a bureau of such association in cases where the association is not independent of the manufacturers of the products involved.

9. Should a trade or industry association undertake to certify to conformity with a standard under a program approved by ASA?

NEMA believes that any program of certification labeling, other than certification by the individual manufacturer in the form of the individual manufacturer's own label, warranty or representations, should be decentralized, and that each trade or industry association, or other type of sponsor, should, wherever such certification labeling plan is needed, undertake responsibility for administering such plan, subject to ASA investigation and certification of the plan. This responsibility includes negotiating the contractual arrangement with the independent testing laboratory, the basis of fees to be charged, and controlling (1) any certifications involved in the plan and (2) the use of any labels or tags or the procedures under any form of listing, indicating that the product conforms to the standards used. Product labeling or listing under such a program should incorporate

reference to the standards used and to ASA certification of the program.

The tag or label authorized by the sponsor, indicating approval by ASA of the certification labeling plan itself, should bear a statement such as follows:

"This label (or tag) is authorized under a plan of certification labeling approved by ASA and (the sponsor) so certifies."

10. Should ASA certify products as to conformity?

NEMA believes that the ASA should hold itself above the actual operation of certification of products, thus maintaining a judicial attitude toward certification plans and certifying agencies, especially if ASA is to perform the function of investigating and certifying certification labeling programs.

NEMA believes that this function alone is a very substantial job for ASA to perform. NEMA believes that if the ASA does not assume and maintain this judicial position, which it would largely lose by undertaking to certify to conformity of products with ASA standards, then sooner or later there would be a demand for some other super-certifying agency which would pass judgment on the certifying competence of ASA as regards any particular product.

11. Should NEMA be prepared to certify the products of non-members, which products are within the scope of the association, as to conformity with ASA standards for the same cost as to members?

NEMA believes that, as sponsor, under any approved plan of certification labeling, it should undertake to control and administer the certification that products conform to the applicable standards and be prepared to make this service available to non-members at the same cost as to members.

NEMA believes, likewise, however, that an additional or distinctive label might be attached to such products indicating membership in NEMA.

Interest in Standards Grows

(*Continued from page* 62)

that a garment will clean satisfactorily but also some of the problems of the dry cleaners themselves may be solved. The problems encountered in dry cleaning were described as:

(1) Highly fugitive black or other color buckram stiffening material in lapels, facings, and shoulder padding which bleed on slightest contact with moisture, frequently used in washables and rainwear;

(2) Fasteners and decorative effects, such as buttons, sequins, etc which bleed, melt, or otherwise become damaged in the cleaning process and frequently damage the fabric on which they are used;

(3) Fugitive dyes in color patterns which bleed on slightest contact with moisture or dry cleaning solvents, or both;

(4) Adhesives in flocking, dress belts, buckles, and certain types of design figuring which are soluble in dry cleaning solvents;

(5) Excessive shrinkage in wool dresses and coats, which apparently occurs in even the most careful processing for soil removal;

(6) Shrinkage and fading in slipcovers, curtains, washable clothing, etc;

(7) Atmospheric or gas fading.

Interest in certification of consumer goods brought about the scheduling of this subject for a panel discussion under the auspices of the Long Island Chemists Association at Brooklyn, New York, January 17th. Dr Bernard L. Oser, Food Research Laboratories, Inc, Long Island City, and chairman of the ASA Sectional Committee on Principles Underlying Valid Certification and Labeling of Commodities, Z34, was moderator, and described briefly the proposed American Standard for Certification Procedure, which is now before the ASA for approval. The consumer, the manufacturer, the testing laboratory, and government procurement were represented on the panel. Dr Persia Campbell, Executive Secretary, Consumers National Federation, represented the consumer. Louis Neuwirth of Stadlord Neuwirth, represented the manufacturer. Preston S. Millar, president, Electrical Testing Laboratories, represented the testing laboratory. Willis MacLeod, Deputy Director, Procurement Division, Standards Branch, U.S. Treasury Department, represented government procurement.

Dr Campbell urged the development of standards of the functional

Table I

Classification of Engineering Quality Meanings of Textile Materials*

Performance Characteristics in Terms of People's Requirements	Characteristics in Relation to Textiles	Words Describing Characteristics
Ease of Bending	Flexibility	Pliable to Stiff
Ease of Squeezing	Compressibility	Soft to Hard
Ease of Stretching	Extensibility	Stretchy to Non-stretchy
Ability to Recover from Deformation	Resilience (May be Flexural, Compressible, Extensible or Torsional)	Springy to Limp
Weight Per Unit Volume	Density	Compact to Open
Divergence of the Surface from Planeness; Resistance to Slipping Offered by the Surface	Surface Contour; Surface Friction	Rough to Smooth; Harsh to Slippery
Apparent Difference in Temperature of the Fabric and the Skin of the Observer Touching It	Thermal Character	Cool to Warm
To Carry a Dead Load	Ultimate Strength	Strength
To Carry a Load Without Deformation	Modulus of Elasticity	Stiffness
To Undergo Deformation and Return to Original Shape After Cessation of Deforming Force	Elastic Limit	Elasticity
To Absorb Shock Without Permanent Deformation	Modulus of Resilience	Resilience
To Endure Large, Permanent Deformations Without Rupture	Ultimate Resilience	Toughness

* Compiled from charts in Dr H. Dewitt Smith's 1944 Marburg lecture, "Textile Fibers."

or performance type and declared that greater effort should be made to develop test methods that would more nearly represent actual use conditions. Mr Neuwirth gave a brief history of the procedure by which lamps that met performance standards set up by the Illuminating Engineering Society before the war had been certified as IES lamps. The plan was dropped during the war because of shortage of materials, but the most important features of the plan will be included in a new undertaking, he declared. The lamps will now bear the label "Certified" instead of IES as in the past, he explained.

Mr Millar outlined briefly the procedure in rating a number of household electrical appliances, and showed how in a number of cases continued checking and testing resulted in general improvement of the product of all manufacturers.

Mr MacLeod described briefly the "willing-to-certify" plan of the Federal Specifications Board. Under this plan the Federal Specifications Board is willing to certify (if a manufacturer requests it) that a product meets the requirements of a specific Federal Specification. When a manufacturer has accepted this certification, any violation can be prosecuted by the Federal Trade Commission, he explained.

At the January meeting of the American Association of Textile Technologists, A. G. Ashcroft, Director of Research of Alexander Smith & Sons Carpet Company, told the Association's members that they should "study, plan, and effectuate a program of research, development, standardization, and control that will bring to the consumer the protection and help he desires and should be given." Although standards will be developed, little progress can result until the problem is approached primarily from a scientific rather than a social and political angle, Mr Ashcroft declared. One of the greatest problems in this connection is the need for improvement of terminology used in connection with textile research, he said. How some of the performance characteristics of textiles might be classified in terms of the requirements of the people using the textiles, the relation of these characteristics to the textiles themselves, and in terms of the words used to describe the characteristics were outlined by Mr Ashcroft (see Table 1). Some aspects of this problem were considered by an ASA sectional committee which met on February 13, 1947 to discuss methods for the development of standard definitions for terms used in describing commodities sold at retail.

Commenting on the existing tests for textile products, Mr Ashcroft mentioned the fact that Jules Labarthe, chairman of the ASA Sectional Committee on Textile Test Methods, had recently sent out a questionnaire asking the opinion of manufacturers, retail laboratories, and consumers as to the value and usefulness of a list of 68 textile tests in measuring the quality of 24 classes of textile products. "The tests with few exceptions received low ratings and for good reasons," Mr Ashcroft reported. "The tests do not give the answers that *help* consumers. They have some usefulness in the design of fabrics and in research and development, based on a hypothetical group of consumer wants, but they do not express relative value and its proper emphasis in the bundle of wants of the mass of expected buyers."

A start is being made toward a solution of some of the problems which are making it difficult to prepare satisfactory consumer goods standards. One of the most fundamental of the jobs now being undertaken is the work being done by two subgroups of the Administrative Committee on Ultimate Consumer Goods recently organized by the American Society for Testing Materials. One of these subgroups is determining what methods are best to use to find out the basic wants of the consumer and to list and weight them properly. The second is to work on the basic rules for defining the consumer products in terms of its qualities, the relationship of those qualities, and the methods of specifying them. "In short," Mr Ashcroft explains, "how to decide and define and report that a consumer product is what it is."

Textile Technologists Elect Freedman and Bronner

EPHRAIM FREEDMAN, director of R. H. Macy & Company's Bureau of Standards, was elected president of the American Association of Textile Technologists at its recent annual meeting; and Bernice Bronner, textile technologist of the American Standards Association, was re-elected secretary for the twelfth year. The AATT is an organization of 700 men and women in the technology end of the textile business and allied fields who have joined together to promote and increase technical knowledge of textile raw materials, processing, and finished fabrics; to encourage research and testing; to promote interchange of professional knowledge among members of the Association and between the Association and other technical societies and associations; and to set up and promote textile standards.

Producers' Council Names Lorimer as Consultant

A. Gordon Lorimer, chief of the Bureau of Architecture, Department of Public Works, New York City, has been named technical consultant to the Producers' Council, national organization of building products manufacturers. Mr Lorimer will coordinate the Council's research and technical activities and will serve as chairman of its Committee on Building Codes. Mr Lorimer represents the Producers' Council on the ASA Building Code Correlating Committee and on the Sectional Committee on Coordination of Dimensions of Building Materials and Equipment.

News from other countries

British Revise Collected Standards On Workshop Practice and Hoists

THE publication of two new volumes, one dealing with standard practices for workshops and the other for lifting tackle, has been announced by the British Standards Institution.

BS Handbook No. 2 on workshop practice is a revision of an earlier edition first issued in 1943 at a time when British industry was intensively engaged in armament production. The quantity of nonstandard tools and gages which were then being ordered was a matter of grave concern to the Government Supply Departments, and it was obvious that lack of the universal adoption of British Standards was costing the country millions of man-hours of skilled labor, as well as serious delays in production.

It was therefore suggested that the essential data from the various British Standards applicable to engineering workshop practice should be gathered together and published in one convenient volume so that every engineer concerned with design or manufacture might have readily available to him the standard data in a concise and handy form.

Modifications have been made since 1943 and they are reproduced in this completely revised edition.

The Handbook reproduces the essential technical data, diagrams, and dimensions from 40 British Standards relating to limits and fits; screw threads, including metric threads and some information on American threads; pipe threads; designs and tolerances for plain and threaded gages; bolts, nuts, machine screws, and washers; small rivets; small tools, such as screwing taps, milling cutters, reamers, and drills; drilling jig bushes; butt-welded lathe and planer tools; keys, keyways, coned-end shafts, splines, and serrations; ball and parallel-roller bearings; and certain details of machine tools, such as milling machine spindles, lathe spindle flanges, and spindle noses for grinding machines.

Also included is extensive data on cast iron and steel and a number of general tables relating to hardness numbers, wire gages, and metric conversions.

BS Handbook No. 4 is the result of two decades of work by responsible committees of the British Standards Institution in formulating a series of standards for lifting tackle (cranes and hoists). It is not claimed that, even now, these standards are either exhaustive or complete, but the BSI believes that their number and importance justifies the collection in a single volume of those which suspend, lift, or lower a load, and which are in common use in a large variety of appliances where failure may result in casualty.

The Handbook includes 21 British Standards for fiber ropes, wire ropes, chain, terminal fittings and attachments for use with wire ropes and chains, together with extracts from six British Standards relating to the materials from which the terminal attachments and fittings are made. Standards for chain slings and wire rope slings are included, as well as for hooks, sockets, thimbles, eyebolts, rings, links, bulldog grips, and bordeaux connections, etc.

The last section of the Handbook gives the current statutory regulations governing the use of rope, chain, and terminal fittings in factories, docks, building, and ship-building. Replicas of the registers and certificates required by the Factories Acts applicable to the contents of the Handbook are reproduced.

Czechoslovakia Now Producing Four Standard Commercial Vehicles

THE production of commercial vehicles in Czechoslovakia today is confined to four standard types of machines, their respective carrying capacities being 1½, 3, 6, and 9 tons, the London *Commercial Motor* reports.

These models represent a substantial advance over prewar models, the London paper declares—an amazing fact when one recalls that during the war the automobile works in Czechoslovakia became mere auxiliary enterprises in the framework of industry in a Nazi-controlled Europe. Although the production of cars was stopped and development work prohibited, Czechoslovakian technicians continued to work on new designs in secret; actually trying out many of their designs before the very eyes of the German supervisory staffs. Thus, immediately after the war when the State took over the main industries, vehicle makers had several advanced models to present.

According to *Commercial Motor*, the 1½ tonner is a Skoda, having

a four-cylindered overhead-valve engine developing 52 brake horsepower. A four-cylindered oil engine is fitted in the 3 tonner, which is a Praga make. The capacity of the engine is 4.5 litres, and it develops 60 brake horsepower at 2000 rpm.

A six-cylindered oil engine powers the Skoda 6-7 tonner, the unit being of 11.8 litres capacity. It develops 145 brake horsepower as a maximum. The largest of the four—the 8-10 tonner—is known as Model III. This vehicle has a 12-cylinder air-cooled oil engine of 14.8 litres capacity, developing 210 brake horsepower. The machine is a six-wheeler, and the drive is taken to all three axles.

The centers of commercial-vehicle production are mainly at the former Avia works, near Prague; the Praga works in Prague; and Tatra in the province of Moravia.

Canadian Association Asked to Certify Building Papers

The Canadian Standards Association is studying a request for a certification procedure which would give purchasers information concerning the degree of prevention of moisture penetration that may be expected of building papers.

Coming within the scope of the CSA Approvals Division, the proposal is being studied with special interest by the Association since the production of building papers is an important item in Canada. A procedure for labeling electrical equipment and equipment in the fire hazard category (oil burners, degreasing solvents, etc) is already being used by the CSA. This procedure would necessarily vary to some extent in certifying building papers, the Association points out.

Brazil Plans Seventh Annual Standards Meeting

The Brazilian Standards Association (Associacão Brasileira de Normas Técnicas) proposes to hold its Seventh Annual Meeting early this year in the cities of Pernambuco (Recife) and Salvador (Bahia) in accordance with its usual practice of convening in various sections of the country.

Canadian Committee Studies Paint Color for Machine Tools

THE Committee on Paint Color for Machine Tools of the Canadian Standards Association has made plans to formulate a draft specification for the preparation of basic colors for use on machine tools, name of selected color, and assignment of a color number. Sample chips showing the selected color or colors are to be included.

At the last meeting of the committee, it was reported that the Canadian Paint, Varnish and Lacquer Association had been consulted in regard to a proposal to include elements of quality in the proposed specification. The Association reported that its recommendations to the CSA would cover only the selection of color, physical factors being omitted.

Color chips in both gray and green were submitted at the meeting for examination. It was pointed out by the Canadian Electrical Manufacturers Association representative that it is desirable that motor controls and switches for machine tools should harmonize with the color of the machine which they control. While a light gray color shows dirt more readily than a darker color, it was agreed that there is less eye fatigue when lighter shades are used. The Illuminating Engineering Society representative urged that strong contrast be avoided; he believed that problems of good seeing were a matter of brightness contrast within limited range.

Since it was felt that a neutral shade of gray would probably give the greatest satisfaction, samples of various shades of gray having a light reflection factor of 20 to 30 percent and as low a gloss as practicable would be submitted to members of the committee. It was suggested that architectural experts and other advisory interests be asked to give their views on the sample shades selected.

The American Standards Association is also interested in paint color for machine tools. At present it is considering a proposal for the initiation of a new project on standard grays which is being submitted to the Mechanical Standards Committee for approval.

Australian Association Names Housing Standards Committee

IN order to coordinate the work of its various existing committees dealing with standards for building construction, the Standards Association of Australia announces the appointment of a Housing Standards Committee.

This committee has been asked to study the application to housing of standard plan elements and standard specifications for building materials, components, and equipment with the object of ensuring economy both in cost of building and in the use of manpower and materials, simplified and speedier procedure in construction and, wherever possible, improved quality in design.

The *SAA Bulletin* indicates that this committee will make recommendations as to new specifications to be prepared and to arrange for the production of data to be used in the drafting and promulgation of Australian standard specifications and codes.

It will also prepare a program of action and will oversee and coordinate the execution of that program by specialist technical committees. Thus, it will be concerned with all matters governing the policy of the Standards Association of Australia in relation to the application of standardization to housing programs throughout the Commonwealth.

Announcement is also made in the *SAA Bulletin* of several requests for new standards which have been received by the Association. They cover containers for low-boiling-point liquids; containers for acids; a series of containers for general use; and rolled threads for sheet metal containers. The Association has decided to give consideration to all of the above proposals and has

referred them to the committee on containers and liquids so that the necessary steps may be taken.

In addition, the Association has been asked to prepare an Australian Standard for dry batteries for radio receivers and for dry batteries for hearing-aid sets. These suggestions were considered to be of primary importance and the Association is now embarking on both projects. For radio batteries, it is suggested that the terminals be standardized; for hearing-aid batteries, it is suggested that the sizes be standardized, so that the various batteries will be interchangeable in equipment made by various manufacturers.

The Associated Chambers of Manufacturers have approached the Standards Association regarding an Australian Standard specification dealing with electronic equipment for use in schools.

New Standards from Other Countries

Standards from other countries may be borrowed by ASA Members.

Great Britain

New Standards Issued

Acid Resisting Silicon Iron Pipes and Pipe Fittings, BS1333:1946
Builders Hardware for Housing, BS1331: 1946
Fluorescent and Phosphorescent Materials, BS1316:1946
Free-Standing, Circular Domestic Electric Wash-Boilers, BS1326:1946
Insulated Asbestos Roved Flexible Cords, BS1327:1946
Leclanche-Type Primary Cells and Batteries, BS397:1946
Schedule for Electric Discharge Lamps for General Purposes, BS1270:1946
Wood Battens for Slating and Tiling, BS1318:1946

New Zealand

Fish Liver Oils, NZSS E 216
Joiner's Glue, E205

Foreign Language Standards

These standards are available only in the language of the country issuing them.

Czechoslovakia

The ASA Library has received 192 printed standards from the Czechoslovakian standardizing association. They cover a very wide field and would require too much space for listing in this issue. Anyone interested may consult these documents in the Library or may borrow a printed index of the standards (in the Czechoslovakian language) upon request.

Italy

Condensed List of Approved Italian Standards

UNI830-841, Ice Bags, Hot Water Bottles, and Similar Rubber Articles
UNI842-867, Automobile Accessories (Dynamos, Starters, Magnetos, Spark Plugs, Windshield Wipers, etc)
UNI868-911, UNI946-954, Unfinished Metric Screws, Bolts, Nuts
UNI912-916, Steel Tubing for Aeronautical Constructions
UNI917-922, UNI941-945, Mooring Pipes, Rigging Shackles, Swivel Links
UNI923-940, Paper Sizes, Letterheads, Envelopes, Drawing Paper (Sheets and Rolls), etc
UNI955-971, Chemical Laboratory Glassware
UNI972-996, Various Types of Marine Chocks
UNI997-1004, Dyestuff
UNI1005-1009, Various Types of Ropes
UNI1017-1063, Marine Manholes
UNI1064-1067, Water Meters and Accessories

Poland

American Type of Brick Walls, PN/B1722, 1723
Clay, Concrete, and Ceramic Bricks, PN/B303, 304, 306, 310, 311
Concrete and Reinforced Concrete Constructions, PN/B195
Different Grades of Tar Paper and Felt, PN/B601, 602, 612, 614
Lathe Dogs, PN/B435, 436
Long Wood Handles, PN/B451
Masonry, Brick and Stone Walls, PN/B162, 167, 182, 183, 189
Portland Cement, PN/B201, 205
Re-utilization of War Rubbles in Construction, PN/B359
Scrapers, Chisels, Pliers, PN/B1110, 1561, 1750, 1751
Specifications for Government Buildings, PN/B1
Terminology for Different Finishing of Stone, PN/B355, 356
Testing Methods of Stones, PN/B370, 374

Sweden

Steel
- 1330: Steel for Pressure Containers, SIS141330
- 1350: Machine Steel, SIS141350
- 1410: Structural Steel for General Purposes St44N, SIS141410
- 1411: Structural Steel for General Purposes, St44S, SIS141411
- 1430: Steel for Pressure Containers, SIS141430
- 1450: Machine Steel, SIS141450
- 1510: Structural Steel for General Purposes St52N, SIS141510
- 1550: Machine Steel, SIS141550
- 1555: Machine Steel, SIS141555
- 1650: Machine Steel, SIS141650
- 1655: Machine Steel, SIS141655
- 2110: Structural Steel for General Purposes, St48S, SIS142110
- 2112: Steel for Pressure Containers, SIS142112
- 2114: Structural Steel for General Purposes St52S, SIS142114

Vickers Hardness Test, SIS112516

Switzerland

Color Code for Conduits, VSM18575
Cross-Weaving Cones 4° 20′, VSM31902
Cross-Weaving Cones 9° 15′, VSM31903
Cross-Weaving Cylinders, VSM31901
Drawing Practice, Arrangement of Views and Sections Intersections, Real and Conventional, VSM10304
Drawing Practice, Lines, VSM10302
Drawing Practice, Welding Symbols, Finish Marks, VSM10336
Flat Fillister Head Machine Screw:
- Fully Threaded Metric Thread M1 to M5.5, VSM12124
- Fully Threaded Whitworth Thread Diam ¼″ to ⅝″, VSM12122
- Long Metric Thread M1 to M10, VSM12129
- Long Whitworth Thread Diam ¼″ to ⅜″, VSM12128
- Metric Thread M6 to M16, VSM12125
- Partially Threaded Short Metric Thread M1 to M5.5, VSM12126
- Partly Threaded Short Whitworth Thread, Diam ¼″ to 1¼″, VSM 12123
- Short Metric Thread M6 to M30, VSM12127

Gas-Thread Taps, ⅛″ to 2″, VSM34665
Machine Screws, Head Dimensions, VSM 12103
Metric Taps, M3 to M52, VSM34664
Round Head Machine Screws:
- Fully Threaded, Metric Thread M1 to M5.5, VSM12132
- Fully Threaded, Whitworth Thread ¼″ to ⅝″, VSM12130
- Long Metric Thread M1 to M10, VSM12137
- Long Whitworth Thread ¼″ to ⅜″, VSM12136
- Metric Thread M6 to M16, VSM 12133
- Partly Threaded, Short Metric Thread M1 to M5.5, VSM12134
- Partly Threaded, Short Metric Thread M6 to M20, VSM12135
- Partly Threaded, Short Whitworth Thread ¼″ to ¾″, VSM12131

Shuttle, Points, VSM32202
Shuttles, VSM32201
Whitworth Taps, ¼″ to 2″, VSM34663

Chairman of NC-RC

Max Gertz, a director on the board of the American Standards Association and vice-president, B. Gertz, Inc, has been elected chairman of the National Consumer-Retailer Council.

New Standards in —ASA Library—

Associations and Technical Societies

These standards may be consulted by Members at the ASA Library or copies may be obtained from the organization issuing the standard.

Air Conditioning & Refrigerating Machinery Association, Inc
(Southern Building, Washington 5, D. C.)

ACRMA Equipment Standards, 1946 Edition, $2.00

American Gear Manufacturers Association
(Empire Building, Pittsburgh 22, Pennsylvania)

Index to AGMA Standards, 000.09, October 1946
Keyways for Holes in Gears for General Industrial Practice, AGMA261.01, September 1946
Helical and Herringbone Mill Gears, (Tentative), AGMA321.02, September 1946

American Society For Testing Materials
(1916 Race St., Philadelphia 3, Pa.)

As a service to Company Members, the ASA maintains a sale file of all ASTM standards. They can be purchased from the ASA Sales Department at 25 cents each, except where otherwise noted.

ASTM Standards

Abrasion of Graded Coarse Aggregate by Use of the Deval Machine, Methods of Test for, D289-46
Apparent Porosity, Water Absorption, Apparent Specific Gravity, and Bulk Density of Burned Refractory Brick, Methods of Test for, C20-46
Asphalt Siding Surfaced with Mineral Granules, Specifications for, D699-46
Bronze Trolley Wire, Specifications for, B9-46
Carbon Residue of Petroleum Products, Method of Test for, D189-46
Chemical Analysis of Soaps Containing Synthetic Detergents, Methods of, D820-46
Combined Drying and Firing Shrinkage of Fireclay Plastic Refractories, Method of Test for, C179-46
Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft, Specifications for, B8-46
Conducting Plant Corrosion Tests, Recommended Practice for, A224-46
Copper Trolley Wire, Specifications for, B47-46
Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for, B116-46

ASTM Standards—Continued

Heat Transmission, Symbols for, C108-46
Insulation Resistance of Electrical Insulating Materials, Methods of Test for, D257-46
Portland Cement, Specifications for, C150-46
Pyrometric Cone Equivalent (PCE) of Refractory Materials, Method of Test for, C24-46
Sampling and Chemical Analysis of Soaps and Soap Products, Methods of, D460-46
Sampling and Chemical Analysis of Special Detergents, Methods of, D501-46
Sampling Hydraulic Cement, Methods of, C183-46
Sieve Analysis and Water Content of Refractory Materials, Methods of Test for, C92-46
Slow-Setting Emulsified Asphalt, Specifications for, D631-46
Testing Magnetic Materials, Method of, A34-46
Tinned Soft or Annealed Copper Wire for Electrical Purposes, Specifications for, B33-46

ASTM Tentatives

Aluminum-Base Alloy Die Castings, Specifications for, B85-46T
Conditioning Plastics and Electrical Insulating Materials for Testings, Methods of, D618-46T
Identification of Crystalline Materials by the Hanawalt X-Ray Diffraction Method, Recommended Practice for, E43-46T
Power Factor and Dielectric Constant of Electrical Insulating Materials, Methods of Test for, D150-46T
Terms Relating to Soaps and Other Detergents, Definitions of, D459-46T

American Iron and Steel Institute
(350 Fifth Avenue, New York 1, N. Y.)

Steel Products Manual:
- Carbon Steel Sheets, Section 11, September 1946, 25¢
- Hot-Rolled Carbon Steel Bars, Section 8, January 1947 (Revision), 25¢
- Wrought Steel Wheels, Section 20, September 1946, 25¢

American Petroleum Institute Division of Production
(1205 Continental Building, Dallas 1, Texas)

All-Welded Oil Storage Tanks, (7th Edition), July 1946, 12-C

API Standards—Continued

All-Welded Production Tanks, (Supplement 1 to 3rd Edition—Tentative), August 1946, 12D
Bolted Tanks, (Supplement 1 to 5th Edition), August 1946, 12B
Casing, Drill Pipe and Tubing, (Supplement 1 to 14th Edition), July 1946, 5A
Line Pipe, (Supplement 1 to 10th Edition), July 1946, 5L
Oil Field Boilers, (Supplement 1 to 9th Edition), May 1946, 2
Performance Properties of Casing and Tubing, (Supplement 2 to 3rd Edition), July 1946, 5C2
Pipe Line Valves, (4th Edition—Tentative), August 1946, 5G1
Production Valves, (5th Edition—Tentative), August 1946, 5G2
Rating of Geared Speed Reducers for Pumping Machines, (Supplement 1 to 4th Edition), August 1946, 11E
Rating of Roller Chain Speed Reducers, (Supplement 1 to 2nd Edition), August 1946, 11E1
Ring Joints for Steel Flanges and Flange Unions, (Supplement 1 to 3rd Edition), August 1946, 5G3
Rotary Drilling Equipment, (Supplement 1 to 9th Edition), August 1946, 7B
Standard Rigs and Derricks, (Supplement 1 to 12th Edition), June 1946, 4
Sucker Rods, (Supplement 1 to 9th Edition), August 1946, 11B
Threads in Fittings and Flanges, (Supplement 1 to 4th Edition—Tentative), August 1946, 5F
Wire Rope, (Supplement 1 to 11th Edition, June 1946, 9A

American Society for Testing Materials
(1916 Race Street, Philadelphia 3, Pa.)

Cement, October 1946, $2.00
Textile Materials, October 1946, $4.00
Chemical Analysis of Metals, 1946 (Revision of 1943 Edition), $4.50
Paper and Paper Products, October 1946, $2.00

Compressed Gas Manufacturers Association
(11 West 42nd Street, New York, N. Y.)

Standard Compressed Gas Cylinder Valve Outlets, United States and Canada, 1946

Manufacturers Standardization Society of the Valve and Fittings Industry
(420 Lexington Avenue, New York 17, N. Y.)

Leaded Red Brass and Leaded Semi-Red Brass Castings for Valves and Pipe Fittings, Specifications for, SP-40-1946, 20¢
Steam-Bronze Castings for Valves, Flanges, and Pipe-Fittings, Specifications for, SP-20-1946, 20¢
150 and 300 LB SP Bronze Flange and Flanged Fitting Standard, SP-2-1946, 45¢

ASA Standards Activities

Society of Automotive Engineers (29 West 39th Street, New York 18, N. Y.)

A complete set of these standards may be obtained for $1.55.

Aluminum Alloy Bars (Extruded) Copper Magnesium Manganese (24S-T), AMS-4152D
Aluminum Alloy Bars (Extruded) Copper Silicon Manganese Magnesium (14S-T), AMS4153
Aluminum Alloy Bars (Extruded) Zinc Magnesium Copper (75S-T), AMS4154A
Aluminum Alloy Bars (Rolled) Copper Silicon Manganese Magnesium (14S-T), AMS4121
Aluminum Alloy Forgings, Copper Silicon Manganese Magnesium (14S-T), AMS-4135D
Aluminum Alloy Forgings, Zinc Magnesium Copper (75S-T), AMS4139A
Aluminum Alloy Tubing (Seamless) Hydraulic, Copper Magnesium Manganese (24S-T), AMS4086A
Aluminum Bronze Bars, AMS4630B
Aluminum Bronze Bars, Hard, AMS4632A
Aluminum Bronze Bars, Silicon, AMS4631A
Anodic Treatment for Aluminum Base Alloys (Chromic Acid Process), AMS2470B
Aviation Fuel, Grade 91/98, AMS3028
Aviation Fuel, Grade 100/130, AMS3032
Aviation Fuel, Grade 122/145, AMS3036
Beryllium Copper Alloy Bars and Forgings, Solution Treated, AMS4650B
Brass Forgings, AMS4614C
Brass Rods and Bars, Free Cutting—Half Hard, AMS4610C
Brass Sheet and Strip, Half Hard, AMS-4507A
Bronze Strip, AMS4520C
Chromium Plating, Hard, AMS2406
Copper Sheet and Strip, Annealed, AMS-4500B
Fabric: Coated Nylon, AMS3665
Insulation, Sound and Thermal, Resin-Bonded Glass Fiber, AMS3675
Magnesium Alloy Forgings, AZ61X, AMS-4358
Manganese Bronze Forgings, AMS4619A
Naval Brass Rods and Bars—Half Hard, AMS4611A
Phosphor Bronze Bars, Hard, AMS4625C
Phosphor Bronze Strip, Spring Temper, AMS4510B
Plastic Moldings, Methyl Methacrylate, AMS3626
Plastic Moldings and Extrusions, Cellulose Acetate, AMS3622
Plastic Moldings and Extrusions, Cellulose Acetate Butyrate, AMS3624
Plastic Moldings and Extrusions, Ethyl Cellulose, AMS3621
Plastic Moldings and Extrusions, Polystyrene, AMS3620
Plastic Molding—Thermosetting, Phenol Formaldehyde-Macerated Fabric Filled, AMS3641
Plastic Sheet, Post-Forming, Cotton Fabric Reinforced Phenol-Formaldehyde, AMS-3605
Silicon Bronze Bars, Hard, AMS4615A
Steel Bars and Forgings:
3.25Ni-1.2Cr-.1Mo (.07-.13C), AMS6260C
.55Ni-.5Cr-.2Mo (.11-.17C), AMS6270D
.55Ni-.5Cr-.2Mo (.18-.23C), AMS6274D
1Ni-.8Cr-.25Mo (.38-.43C), AMS6342A
.95Cr-.15V (.48-.55C), AMS6448B
Steel Tubing, Corrosion Resistant, High Pressure Hydraulic. 18Cr—8Ni, AMS-5566A
Tin Plating, AMS2408
Tolerances, Aluminum and Aluminum Alloy Bar, Rod and Shapes, Rolled, AMS-2201A

American Standards Approved

Brass or Bronze Screwed Fittings, 125 Lb, B16.15-1947
Sponsors: American Society of Mechanical Engineers; Heating, Piping and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

Surface Roughness, Waviness, and Lay, B46.1-1947
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Petroleum Products and Lubricants—
Method of Test for Ash Content of Petroleum Oils (ASTM D482-46; ASA Z11.54-1947)
Test for Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products (Revision of ASTM D86-45; ASA Z11.10-1945) ASTM D86-46; ASA Z11.10-1947
Test for Flash and Fire Points by Means of Open Cup (Revision of ASTM D92-45; ASA Z11.6-1945) ASTM D92-46; ASA Z11.6-1947
Test for Flash Point by Means of the Pensky-Martens Closed Tester (Revision of ASTM D93-42; ASA Z11.7-1942) ASTM D93-46; ASA Z11.7-1947
Test for Water in Petroleum Products and Other Bituminous Materials (Revision of ASTM D95-40; ASA Z11.9-1940) ASTM D95-46; ASA Z11.9-1947
Test for Water and Sediment in Petroleum Products by Means of Centrifuge (Revision of ASTM D96-40; ASA Z11.8-1940) ASTM D96-46; ASA Z11.8-1947
Test for Carbon Residue of Petroleum Products (Conradson Carbon Residue) (Revision of ASTM D189-41; ASA Z11.25-1941) ASTM D189-46; ASA Z11.25-1947
Test for Knock Characteristics of Motor Fuels (Revision of ASTM D357-45; ASA Z11.37-1945) ASTM D357-46; ASA Z11.37-1947
Test for Gum Content of Gasoline (Revision of ASTM D381-44; ASA Z11.36-1944) ASTM D381-46; ASA Z11.36-1947
Sponsor: American Society for Testing Materials

American Standards Reaffirmed

Manhole Frames and Covers for Subsurface Structures, A35.1-1941 Reaffirmed 1947
Sponsors: American Society of Civil Engineers; Telephone Group

Inch-Millimeter Conversion for Industrial Use, B48.1-1933 Reaffirmed 1947

Preferred Numbers, Z17.1-1936 Reaffirmed 1947

Petroleum Products and Lubricants—
Test for Flash Point by Means of the Tag Closed Tester (ASTM D56-36; ASA Z11.24-1936) Reaffirmed 1947
Test for Melting Point of Paraffin Wax (ASTM D87-42; ASA Z11.4-1942) Reaffirmed 1947

American Standards Reaffirmed—Continued

Test for Precipitation Number of Lubricating Oils (ASTM D91-40; ASA Z11.30-1940) Reaffirmed 1947
Test for Cloud and Pour Points (ASTM D97-39; ASA Z11.5-1939) Reaffirmed 1947
Test for Melting Point of Petrolatum (ASTM D127-30; ASA Z11.22-1932) Reaffirmed 1947
Analysis of Grease (ASTM D128-40; ASA Z11.16-1940) Reaffirmed 1947
Detection of Free Sulfur and Corrosive Sulfur Compounds in Gasoline (ASTM D130-30; ASA Z11.21-1930) Reaffirmed 1947
Test for Color of Refined Petroleum Oil by Means of Saybolt Chromometer (ASTM D156-38; ASA Z11.35-1938) Reaffirmed 1947
Test for Steam Emulsion of Lubricating Oils (ASTM D157-36; ASA Z11.15-1936) Reaffirmed 1947
Test for Distillation of Gas Oil and Similar Distillate Fuel Oils (ASTM D158-41; ASA Z11.26-1941) Reaffirmed 1947
Test for Burning Quality of Kerosine Oils (ASTM D187-39; ASA Z11.17-1939) Reaffirmed 1947
Abridged Volume Correction Table for Petroleum Oils (ASTM D206-36; ASA Z11.1-1936) Reaffirmed 1947
Test for Distillation of Natural Gasoline (ASTM D216-40; ASA Z11.11-1940) Reaffirmed 1947
Test for Burning Quality of Long-Term Burning Oil for Railway Use (ASTM D219-36; ASA Z11.19-1936) Reaffirmed 1947
Test for Burning Quality of Mineral Seal Oil (ASTM D239-30; ASA Z11.18-1930) Reaffirmed 1947
Test for Thermal Value of Fuel Oil (ASTM D240-39; ASA Z11.14-1939) Reaffirmed 1947
Sampling Petroleum and Petroleum Products (ASTM D270-33; ASA Z11.33-1935) Reaffirmed 1947
Test for Distillation of Crude Petroleum (ASTM D285-41; ASA Z11.32-1941) Reaffirmed 1947
Test for Autogenous Ignition Temperatures of Petroleum Products (ASTM D286-30; ASA Z11.23-1932) Reaffirmed 1947
Test for Gravity of Petroleum and Petroleum Products by Means of the Hydrometer (ASTM D287-39; ASA Z11.31-1939) Reaffirmed 1947
Definition of Terms Relating to Petroleum (ASTM D288-39; ASA Z11.28-1939) Reaffirmed 1947
Test for Dilution of Crankcase Oils (ASTM D322-35; ASA Z11.29-1935) Reaffirmed 1947
Test for Vapor Pressure of Petroleum Products (Reid Method) (ASTM D323-43; ASA Z11.44-1943) Reaffirmed 1947
Standard Viscosity-Temperature Charts for Liquid Petroleum Products (ASTM D341-43; ASA Z11.39-1943) Reaffirmed 1947
Conversion of Kinematic Viscosity to Saybolt Universal Viscosity (ASTM D446-39; ASA Z11.46-1941) Reaffirmed 1947

American Standards Reaffirmed—Continued

Test for Distillation of Plant Spray Oils (ASTM D447-41; ASA Z11.43-1941) Reaffirmed 1947

Test for Unsulfonated Residue of Plant Spray Oils (ASTM D483-40; ASA Z11.41-1940) Reaffirmed 1947

Specifications for Stoddard Solvent (ASTM D484-40; ASA Z11.42-1940) Reaffirmed 1947

Test for Carbon Residue of Petroleum Products (Ramsbottom Carbon Residue (ASTM D524-42; ASA Z11.47-1942) Reaffirmed 1947

Test for Tetraethyl Lead in Gasoline (ASTM D526-42; ASA Z11.48-1942) Reaffirmed 1947

Test for Dropping Point of Lubricating Grease (ASTM D566-42; ASA Z11.51-1943) Reaffirmed 1947

Calculating Viscosity Index (ASTM D567-41; ASA Z11.45-1941) Reaffirmed 1947

Sponsor: American Society for Testing Materials

Standards Being Considered for Approval

Basic Graphical Symbols for Electrical Apparatus, Z32.12

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

Motion Picture Photography—

Safety Film (Revision of American Recommended Practice Z22.31-1941, to be designated as Proposed American Standard Definition for Motion Picture Safety Film, Z22.31)

Theater Projection Rooms (Revision of American Recommended Practice Z22.28-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Rooms, Z22.28)

Theater Projection Screens (Revision of American Recommended Practice, Z22.29-1941, to be designated as Proposed American Standard Dimensions for Motion Picture Theater Projection Screens, Z22.29)

Sponsor: Society of Motion Picture Engineers

Still Photography—

Dimensions for Industrial X-Ray Sheet Film (Inch Sizes), Z38.1.25 (Revision of Z38.1.25-1944)

Dimensions for Graphic Arts Sheet Film (Inch Sizes), Z38.1.26 (Revision of Z38.1.26-1944)

Dimensions for Medical X-Ray Sheet Film (Inch and Centimeter Sizes), Z38.1.27 (Revision of Z38.1.27-1944)

Dimensions for Professional Portrait and Commercial Sheet Film (Inch Sizes), Z38.1.28 (Revision of Z38.1.28-1944)

Sensitometry of Photographic Papers, Z38.2.3

Distance Scales Marked in Feet for Focusing Camera Lenses, Z38.4.3 (Proposed revision of American Standard for Distance Scales Marked in Feet, Z38.4.3-1942)

Sponsor: Optical Society of America

Methods of Testing Molded Materials Used for Electrical Insulation (Revision of ASTM D48-46 T; ASA C59.1-1944)

Sponsor: American Society for Testing Materials

Standards Being Considered for Reaffirmation

Specifications for Hot-Rolled Copper Rods for Electrical Purposes (ASTM B49-41; ASA H4.7-1942)

Sponsor: American Society for Testing Materials

Rules for Rounding Off Numerical Values, Z25.1-1940

Withdrawal of Approval Being Considered

Fader Setting Instructions for Motion Picture Theatres, Z22.32-1941

Sponsor: Society of Motion Picture Engineers

Standards Submitted

Gray Iron Castings, Specifications for (Revision of ASTM A 48-41; ASA G25.1-1942)

Sponsor: American Society for Testing Materials

Road and Paving Materials—

Abrasion of Coarse Aggregate by Use of the Los Angeles Machine (Revision of ASTM C 131-44; AASHO T96-44; ASA A37.7-1945)

Sieve Analysis of Fine and Coarse Aggregates (Revision of ASTM C136-39; AASHO T27-42; ASA A37.8-1943)

Sponsor: American Society for Testing Materials

Standards Submitted—Continued

Cast Iron Flanges and Flanged Fittings for Refrigerant Piping 300 Lb, B16.16

Sponsors: Heating, Piping and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry; American Society of Mechanical Engineers

Practice for Certification Procedures, Z34.1

Endorsing Sponsor: Association of Consulting Chemists and Chemical Engineers, Inc

Code for Pressure Piping, Supplement No. 2 to B31.1-1942

Sponsor: American Society of Mechanical Engineers

Nomenclature for Milling Cutter Teeth, B5

Sponsors: Society of Automotive Engineers; National Machine Tool Builders' Association; American Society of Mechanical Engineers

New Projects Being Considered

Standards in Optics

Steel Raceways for Electrical Wiring Systems

New Project Requested

Stainless Steel Pipe and Fittings (Requested by the Heating, Piping and Air Conditioning Contractors National Association)

News About ASA Projects

Bakery Equipment, Z50—

Sponsor: American Society of Bakery Engineers

A second draft of the proposed American Standard Safety Code for Bakery Equipment, Z50.1, is now being circulated to all members of the sectional committee for approval.

Building Code Requirements for Fire Protection and Fire Resistance, A51—

Sponsors: National Board of Fire Underwriters; National Fire Protection Association; National Bureau of Standards, U. S. Department of Commerce

The sectional committee met at the Department of Commerce in Washington January 23, and heard reports from seven subcommittees. The committee voted a resolution expressing a deep sense of loss in the death of Rudolph P. Miller, "without whose wise leadership and counsel the organization of this sectional committee would not have been possible."

The report of Subcommittee II on Roofing will be sent to letter ballot of the full committee for acceptance, as a basis for its use in a completed standard. The report of the Subcommittees on Definitions and Classifications, on Interior Finish, on Protection of Openings, on Height and Area Limitations, and on Fire Resistance Ratings were accepted as reports of progress. As a result of the report of the Subcommittee on Floor Finishes and Floor Coverings, it was voted that the experience to date indicated that floor finishes now in common use did not present sufficient fire hazard to warrant regulation in building codes, but that the subcommittee would be available to consider further data that may be obtained.

It was decided that subcommittee reports may be released to organizations or individuals not members of the committee if the sectional committee specifically authorizes such action.

Cast Iron Flanges and Flanged Fittings for Refrigerant Piping, 300 Lb, B16.16—

Sponsors: Heating, Piping and Air Conditioning Contractors' National Association; the Manufacturers' Standardization Society of the Valve & Fittings Industry; The American Society of Mechanical Engineers

This proposed standard, recently submitted to the American Standards Association for approval, was initiated originally in 1924 by a subgroup on ammonia flanges and fittings of Subcommittee 1 of the Sectional Committee on Pipe Flanges and Fittings. Data collected by the Refrigerating Machinery Association covering dimensions and sizes of the interchangeable features of ammonia fittings and valves were used in preparing a recommended practice which was adopted by the Refrigerating Manufacturers' Association in 1931, but was not referred to the sectional committee

for action. Continued requests for the standardization of refrigerant flanges and fittings resulted in appointment of a new subgroup of Subcommittee 1 for a restudy of the situation in 1943. The final report of the subgroup was completed in January 1945 and distributed broadly for criticism and comment. It has now been approved by the sponsors and submitted to ASA. The proposed new American Standard is being referred to the Mechanical Standards Committee for approval.

Code for Pressure Piping, B31.1-1942—

Sponsor: American Society of Mechanical Engineers

A proposed second supplement consisting of corrections, changes, and additions to the 1942 edition of the American Standard Code for Pressure Piping has been submitted to the American Standards Association for approval as American Standard. The first supplement was approved by the ASA in November 1944. Both supplements originated with the Subcommittee on Scope and Intent which was appointed to handle inquiries concerning the various requirements of the code. The new supplement has been sent out to letter ballot of the Mechanical Standards Committee.

Graphical Symbols and Abbreviations for Use on Drawings, Z32—

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

The first meeting of this sectional committee since 1939 was held December 3. The committee works through three subcommittees: Subcommittee I on Symbols for Use on Drawings in Mechanical Engineering; Subcommittee II on Symbols for Use on Drawings in Electrical Engineering; and Subcommittee III on Abbreviations for Use on Drawings. Subcommittee III recently completed the American Standard Abbreviations for Use on Drawings, which was approved late in 1946, and copies of which are now available from the American Standards Association. This subcommittee is now working on an appendix to the standard to cover abbreviations for about 1500 additional words.

Fourteen subgroups of Subcommittee I on Mechanical Symbols are being organized. A meeting of Subcommittee I is tentatively scheduled for May 1947 when the reports of these committees will be considered.

Mercury-Arc Rectifiers, C34—

Sponsor: American Institute of Electrical Engineers

The ASA Sectional Committee on Mercury-Arc Rectifiers, C34, now has under consideration a draft report on a proposed standard for Pool Cathode Mercury-Arc Power Convertors, prepared and published by the American Institute of Electrical Engineers. At a meeting of the committee in December, various sections of the draft were assigned to subgroups for further revision.

F. J. Gallogly of the ASA staff has been assigned as technical secretary of the committee.

Methods of Recording and Compiling Accident Statistics, Z16—

Sponsors: International Association of Industrial Accident Boards and Commissions; National Safety Council

In line with a provision of the American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, a Committee of Judges has been organized in order to provide interpretations of the standard. Its membership includes: Henry B. Duffus, Westinghouse Electric Corporation, chairman; Paul Dorweiler, Aetna Life Insurance Company; W. C. James, National Safety Council; Max D. Kossoris, U. S. Bureau of Labor Statistics; J. Willard Lord, Atlantic Refining Company; Dr Eugene B. Patton, New York Department of Labor; and D. C. Stewart, Buffalo-Niagara Power Corporation.

At its first meeting on January 8, the committee gave consideration to various cases which had already been submitted for interpretation.

Any questions pertaining to the use and application of this standard which members wish the committee to interpret should be sent to the American Standards Association.

Nomenclature for Milling Cutter Teeth, B5—

Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers, Inc; Metal Cutting Tool Institute

A proposed supplement to the American Standard for Milling Cutters, B5c-1930, including definitions of parts of teeth of plain milling cutters, side milling cutters, face milling cutters, and a section covering definitions of speeds and feeds, has been submitted to the American Standards Association for approval. The supplement has been sent out to letter ballot of the Mechanical Standards Committee.

Performance Requirements for Protective Occupational Footwear, Z41—

Sponsors: National Conservation Bureau; National Safety Council

A meeting of the steering committee of this sectional committee was held in February to resume the work of the peacetime project and to continue the start made by the war committee. Two subcommittees were appointed—one to review the American War Standards for safety shoes, discarding those parts of the war standards which no longer apply and salvaging others which might still be used; another on research, which will study data and tests already compiled by governmental and other agencies, as a basis for consideration of the problem of whether additional research is necessary.

In addition, it was decided that the ASA will send out a questionnaire to large manufacturers and industrial users of safety shoes concerning their experiences with durability, attitudes of employees, methods of sale, etc, in an attempt to uncover any outstanding deficiencies in the present standards.

Photography, Z38—

Sponsor: Optical Society of America

A proposed revision entitled "Method for Determining Photographic Speed and Exposure Index" of the American Standard Method for Determining Photographic Speed and Speed Number, Z38.2.1-1946, is out to letter ballot of the sectional committee following the recommendation of Subcommittee 2 on Sensitivity to Radiant Energy.

Preferred Numbers, Z17.1-1936, Reaffirmed 1947—

The American Standard, Preferred Numbers, originally approved in 1936, has now been reaffirmed after consideration as to whether it is still up to date. The reaffirmation of the standard calls attention to the fact that the series of sizes recommended as "preferred" are still considered satisfactory for use by industry. The standard gives two systems of Preferred Numbers. One system is in decimal values, in the range from 1 to 10 or its multiples (10 to 100; 100 to 1,000, etc) or submultiples (0.1 to 1.0; 0.01 to 0.10, etc) divided into 5, 10, 20, 40, or 80 steps. The members of each series increase in a constant ratio. Hence, in the 5-series, each number is about 60 percent larger than the previous one; in the 10-series, the increase is about 25 percent; in the 20-series, about 12 percent; in the 40-series about 6 percent; and in the 80-series about 3 percent. The second system is in binary fractions, and has the same ratios as the decimal series.

Principles Underlying Valid Certification and Labeling of Commodities, Z34—

Endorsing Sponsor: Association of Consulting Chemists and Chemical Engineers, Inc

The revised draft of the proposed American Standard for Certification Procedures, Z34.1, has been submitted to the American Standards Association for approval. (See also page 63).

Proposed Project on Model Laws and Ordinances—

An informal conference attended by representatives of government officials, building organizations, and electrical groups met January 15 and discussed a proposal of the National Electrical Manufacturers Association that the ASA initiate a project for the development of model laws and ordinances. Such model laws would permit the adoption by states and municipalities of nationally recognized codes and standards, by reference. The conference recommended that the ASA set up a committee "to study the problem of developing model laws and ordinances to effectuate the adoption and use of nationally recognized codes and standards." Following the meeting a special committee was appointed, with W. R. Smith, chairman of the ASA Safety Code

Correlating Committee, as chairman. Other members of the committee are:

Percy Bugbee, National Fire Protection Association
W. J. Donald, National Electrical Manufacturers Association
John L. Haynes, U. S. Department of Commerce, Construction Division
M. H. Hedges, International Association of Governmental Labor Officials
C. George Krueger, International Association of Industrial Accident Boards and Commissions

Refrigerators, B38—

Sponsors: American Society of Refrigerating Engineers; U. S. Department of Agriculture, Bureau of Home Nutrition & Home Economics

At a recent meeting of the Subcommittee on Home and Farm Freezers, consideration was given to drafts already published which deal with the problem of Test Methods and specifications for home and farm freezers. It was decided to use a draft of the American Society of Refrigerating Engineers as a basis for discussion; all others would be compared to it. Members have been appointed to redraft general sections of the ASRE draft, the redrafts to be in the hands of the chairman by March 15.

Safety Code for Power Presses and Foot and Hand Presses, Z11—

Sponsor: National Safety Council

At the last meeting of this sectional committee, held in Washington February 6 and 7, a third draft of the proposed revision of the standard was discussed. As a result of numerous corrections, a fourth draft will be prepared. The committee is also concerned with the collection of suitable illustrations and the drafting of an appendix to go with the standard.

Soldered-Joint Fittings, A40.3-1941—

Sponsors: American Public Health Association; American Society of Mechanical Engineers

Studies are now under way for a revision of the 1941 edition of this American Standard. A first draft is being circulated for criticism.

Stainless Steel Pipe and Fittings—

The Heating, Piping and Air Conditioning Contractors National Association (HPAC) has requested the ASA to take the necessary steps to establish an American Standard for stainless steel pipe and fittings. This request was made following a conference between the Committee on Standards of the HPAC and principal manufacturers of stainless steel pipe and fittings.

The ASA Mechanical Standards Committee has decided that the work on stainless steel fittings should be referred to the Sectional Committee on Pipe Flanges and Fittings, B16, and the work on stainless steel pipe to the Sectional Committee on Dimensions and Materials of Wrought Iron and Wrought Steel Pipe and Tubing, B36.

Transformers, Regulators, and Reactors, C57—

Sponsor: Electrical Standards Committee

A letter ballot has been circulated to members of ASA Sectional Committee C57, covering the following proposed American Standards which are revisions of the American Standards for Transformers, Regulators, and Reactors, C57.1-1942, C57.2-1942 C57.3-1942.

American Standard Terminology for Transformers, Regulators, and Reactors, C57.10
American Standard General Requirements for Transformers, Regulators, and Reactors, C57.11
American Standard for Distribution, Power and Regulating Transformers, and Reactors Other Than Current-Limiting Reactors, C57.12
American Standard for Instrument Transformers, C57.13
American Standard for Constant-Current Transformers of the Moving-Coil Type, C57.14
American Standard for Step-Voltage and Induction-Voltage Regulators, C57.15
American Standard for Current-Limiting Reactors, C57.16
American Standard for General-Purpose Specialty Transformers, C57.17
American Standard for Rectifier Transforming Equipment, C57.18
American Standard Test Code for Distribution, Power, and Regulating Transformers, C57.22
American Standard Test Code for Instrument Transformers, C57.23
American Standard Test Code for Rectifier Transforming Equipment, C57.28
American Standard Guide for Operation of Transformers, Regulators, and Reactors at Altitudes Greater Than 3300 Feet (1000 Meters), C57.31
American Standard Guide for Loading Oil-Immersed Distribution and Power Transformers, C57.32
American Standard Guide for Loading and Operation of Instrument Transformers, C57.33
American Standard Guide for Loading Pole-Type Constant-Current Transformers, C57.34
American Standard Guide for Loading Step-Voltage and Induction-Voltage Regulators, C57.35
American Standard Guide for Loading Current-Limiting Reactors, C57.36

Women's Industrial Clothing, L17—

At the last meeting of ASA Sectional Committee L17, its members discussed the advisability of using the four American War Standards developed by the war committee on women's industrial clothing. After some discussion, it was agreed that the tables on sizes appearing in the four standards should be reviewed. Information obtained by the U. S. Army in measuring large numbers of WACS could serve as a basis for revision of these tables if investigation proved that revision was necessary.

Wire Ropes for Mines, M11-1927—

Sponsor: American Mining Congress

Revision of the 1927 edition of the standard for Wire Ropes for Mines has been a problem of much concern to all interested in minimizing hazards in mine hoisting and haulage. No satisfactory method of determining when wire ropes should be withdrawn from service has ever been devised, although research during the past 20 years in South Africa, Great Britain, and the United States has definitely established the fact that a number of proposed tests were unsuitable. Recent research in Canada as a result of the accident in the Paymaster mine when 16 miners were killed has furnished additional data. Further research is under consideration by the United States Bureau of Mines and by the National Safety Council. Pending completion of the proposed research, revision of the old standard has been deferred, even though recommendations from the Wire Rope and Strand Manufacturers Association on types and specifications for hoisting wire rope have been issued. The manufacturers' proposals are largely based on the Simplified Practice Recommendation on Wire Rope, R 198-43, promulgated by the National Bureau of Standards.

Five New Members Elected To ASA Board of Directors

(*Continued from page* 69)

Pratt entered the employ of the Babcock & Wilcox Company at its Bayonne Works in New Jersey. He became president of the company in 1924 and has continued in that position to date. In addition, Mr Pratt serves as director of the Babcock & Wilcox Company, Babcock & Wilcox Limited (England), Central Hanover Bank & Trust Company, Fidelity-Phenix Fire Insurance Company, Fidelity & Casualty Company of New York, American Eagle Fire Insurance Company, and Worthington Pump & Machinery Corporation.

Directors whose terms have just expired include:

Carl Breer, executive engineer, Chrysler Corporation;
Wallace Falvey, executive vice-president, Massachusetts Bonding and Insurance Company;
Willits H. Sawyer, director, Cincinnati and Lake Erie Transportation Company;
Ole Singstad, consulting engineer;
R. E. Zimmerman, vice-president, U.S. Steel Corporation.

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